9–24–97
Vol. 62 No. 185
Pages 49905–50228

Wednesday
September 24, 1997

federal register

Now Available Online

Code of Federal Regulations

via

GPO Access

(Selected Volumes)

Free, easy, online access to selected *Code of Federal Regulations (CFR)* volumes is now available via *GPO Access*, a service of the United States Government Printing Office (GPO). *CFR* titles will be added to *GPO Access* incrementally throughout calendar years 1996 and 1997 until a complete set is available. GPO is taking steps so that the online and printed versions of the *CFR* will be released concurrently.

The *CFR* and *Federal Register* on *GPO Access*, are the official online editions authorized by the Administrative Committee of the Federal Register.

New titles and/or volumes will be added to this online service as they become available.

http://www.access.gpo.gov/nara/cfr

For additional information on ***GPO Access*** products, services and access methods, see page II or contact the *GPO Access* User Support Team via:

★ Phone: toll-free: 1-888-293-6498

★ Email: gpoaccess@gpo.gov

FEDERAL REGISTER Published daily, Monday through Friday, (not published on Saturdays, Sundays, or on official holidays), by the Office of the Federal Register, National Archives and Records Administration, Washington, DC 20408, under the Federal Register Act (49 Stat. 500, as amended; 44 U.S.C. Ch. 15) and the regulations of the Administrative Committee of the Federal Register (1 CFR Ch. I). Distribution is made only by the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402.

The Federal Register provides a uniform system for making available to the public regulations and legal notices issued by Federal agencies. These include Presidential proclamations and Executive Orders and Federal agency documents having general applicability and legal effect, documents required to be published by act of Congress and other Federal agency documents of public interest. Documents are on file for public inspection in the Office of the Federal Register the day before they are published, unless earlier filing is requested by the issuing agency.

The seal of the National Archives and Records Administration authenticates this issue of the Federal Register as the official serial publication established under the Federal Register Act. 44 U.S.C. 1507 provides that the contents of the **Federal Register** shall be judicially noticed.

The Federal Register is published in paper, 24x microfiche and as an online database through *GPO Access*, a service of the U.S. Government Printing Office. The online edition of the **Federal Register** on *GPO Access* is issued under the authority of the Administrative Committee of the Federal Register as the official legal equivalent of the paper and microfiche editions. The online database is updated by 6 a.m. each day the **Federal Register** is published. The database includes both text and graphics from Volume 59, Number 1 (January 2, 1994) forward. Free public access is available on a Wide Area Information Server (WAIS) through the Internet and via asynchronous dial-in. Internet users can access the database by using the World Wide Web; the Superintendent of Documents home page address is http://www.access.gpo.gov/su__docs/, by using local WAIS client software, or by telnet to swais.access.gpo.gov, then login as guest, (no password required). Dial-in users should use communications software and modem to call (202) 512–1661; type swais, then login as guest (no password required). For general information about *GPO Access*, contact the *GPO Access* User Support Team by sending Internet e-mail to gpoaccess@gpo.gov; by faxing to (202) 512–1262; or by calling toll free 1–888–293–6498 or (202) 512–1530 between 7 a.m. and 5 p.m. Eastern time, Monday–Friday, except for Federal holidays.

The annual subscription price for the **Federal Register** paper edition is $555, or $607 for a combined **Federal Register**, Federal Register Index and List of CFR Sections Affected (LSA) subscription; the microfiche edition of the **Federal Register** including the Federal Register Index and LSA is $220. Six month subscriptions are available for one-half the annual rate. The charge for individual copies in paper form is $8.00 for each issue, or $8.00 for each group of pages as actually bound; or $1.50 for each issue in microfiche form. All prices include regular domestic postage and handling. International customers please add 25% for foreign handling. Remit check or money order, made payable to the Superintendent of Documents, or charge to your GPO Deposit Account, VISA or MasterCard. Mail to: New Orders, Superintendent of Documents, P.O. Box 371954, Pittsburgh, PA 15250–7954.

There are no restrictions on the republication of material appearing in the **Federal Register.**

How To Cite This Publication: Use the volume number and the page number. Example: 60 FR 12345.

SUBSCRIPTIONS AND COPIES

PUBLIC

Subscriptions:

Paper or fiche	**202–512–1800**
Assistance with public subscriptions	**512–1806**

General online information **202–512–1530; 1–888–293–6498**

Single copies/back copies:

Paper or fiche	**512–1800**
Assistance with public single copies	**512–1803**

FEDERAL AGENCIES

Subscriptions:

Paper or fiche	**523–5243**
Assistance with Federal agency subscriptions	**523–5243**

Contents

Federal Register

Vol. 62, No. 185

Wednesday, September 24, 1997

Separate Parts In This Issue

Reader Aids
Additional information, including a list of telephone numbers, finding aids, reminders, and a list of Public Laws appears in the Reader Aids section at the end of this issue.

Electronic Bulletin Board
Free **Electronic Bulletin Board** service for Public Law numbers, **Federal Register** finding aids, and a list of documents on public inspection is available on 202–275–1538 or 275–0920.

Public Laws Electronic Notification Service
Free electronic mail notification of newly enacted Public Laws is now available. To subscribe, send E-mail to **PENS@GPO.GOV** with the message: *SUBSCRIBE PENS-L FIRSTNAME LASTNAME.*

CFR PARTS AFFECTED IN THIS ISSUE

A cumulative list of the parts affected this month can be found in the Reader Aids section at the end of this issue.

7 CFR
993.....49905
1924.....49907

10 CFR
430.....00000

12 CFR
615.....49907

Proposed Rules:
900.....49943
932.....49943
933.....49943

14 CFR

Proposed Rules:
39.....49945

20 CFR

Proposed Rules:
220.....00000

21 CFR
177.....49908

Proposed Rules:
312.....49946

29 CFR
1952 (2 documents) 49908
49910

31 CFR
343.....49912

39 CFR
20.....49915

40 CFR
180 (3 documents) 49918,
49925, 49931
185 (2 documents) 49925,
49931
186.....49931

Proposed Rules:
9.....00000
86.....00000
89.....00000

42 CFR
473.....49937

45 CFR
650.....49938

49 CFR
365.....49939
366.....49939
372.....49939
375.....49939
387.....49939
390.....49939

Proposed Rules:
171.....00000
172.....00000
173.....00000
175.....00000
177.....00000
178.....00000
180.....00000

50 CFR

Proposed Rules:
17.....49954

Rules and Regulations

Federal Register
Vol. 62, No. 185
Wednesday, September 24, 1997

DEPARTMENT OF AGRICULTURE

Agricultural Marketing Service

7 CFR Part 993

[Docket No. FV97–993–1 FIR]

Dried Prunes Produced in California; Increased Assessment Rate

AGENCY: Agricultural Marketing Service, USDA.

ACTION: Final rule.

SUMMARY: The Department of Agriculture (Department) is adopting, as a final rule, without change, the provisions of an interim final rule which increased the assessment rate for the Prune Marketing Committee (Committee) under Marketing Order No. 993 for the 1997–98 and subsequent crop years. The Committee is responsible for local administration of the marketing order which regulates the handling of dried prunes grown in California. Authorization to assess dried prune handlers enables the Committee to incur expenses that are reasonable and necessary to administer the program. The 1997–98 crop year covers the period August 1 through July 31. The assessment rate will continue in effect indefinitely unless modified, suspended, or terminated.

EFFECTIVE DATE: October 24, 1997.

FOR FURTHER INFORMATION CONTACT: Richard P. Van Diest, Marketing Specialist, or Diane Purvis, Marketing Assistant, California Marketing Field Office, Fruit and Vegetable Division, AMS, USDA, 2202 Monterey Street, Suite 102B, Fresno, California 93721; telephone: (209) 487–5901, Fax: (209) 487–5906; or George Kelhart, Marketing Order Administration Branch, Fruit and Vegetable Division, AMS, USDA, Room 2525–S, P.O. Box 96456, Washington, DC 20090–6456; telephone: (202) 720–2491, Fax: (202) 720–5698. Small businesses may request information on compliance with this regulation by contacting Jay Guerber, Marketing Order Administration Branch, Fruit and Vegetable Division, AMS, USDA, Room 2525–S, P.O. Box 96456, Washington, DC 20090–6456; telephone: (202) 720–2491, Fax: (202) 720–5698.

SUPPLEMENTARY INFORMATION: This rule is issued under Marketing Agreement and Order No. 993, both as amended (7 CFR part 993), regulating the handling of dried prunes grown in California, hereinafter referred to as the ''order.'' The marketing agreement and order are effective under the Agricultural Marketing Agreement Act of 1937, as amended (7 U.S.C. 601–674), hereinafter referred to as the ''Act.''

The Department is issuing this rule in conformance with Executive Order 12866.

This final rule was reviewed under Executive Order 12988, Civil Justice Reform. Under the marketing order now in effect, California dried prune handlers are subject to assessments. Funds to administer the order are derived from such assessments. It is intended that the assessment rate as issued herein be applicable to all assessable dried prunes beginning August 1, 1997, and continuing until amended, suspended, or terminated. This rule will not preempt any State or local laws, regulations, or policies, unless they present an irreconcilable conflict with this rule.

The Act provides that administrative proceedings must be exhausted before parties may file suit in court. Under section 608c(15)(A) of the Act, any handler subject to an order may file with the Secretary a petition stating that the order, any provision of the order, or any obligation imposed in connection with the order is not in accordance with law and request a modification of the order or to be exempted therefrom. Such handler is afforded the opportunity for a hearing on the petition. After the hearing the Secretary would rule on the petition. The Act provides that the district court of the United States in any district in which the handler is an inhabitant, or has his or her principal place of business, has jurisdiction to review the Secretary's ruling on the petition, provided an action is filed not later than 20 days after the date of the entry of the ruling.

This rule continues in effect the assessment rate of $1.60 per salable ton of dried prunes established for the Committee for the 1997–98 and subsequent crop years. The assessment rate had been $1.50 per ton of salable dried prunes.

The California dried prune marketing order provides authority for the Committee, with the approval of the Department, to formulate an annual budget of expenses and collect assessments from handlers to administer the program. The members of the Committee are producers and handlers of California dried prunes. They are familiar with the Committee's needs and with the costs for goods and services in their local area and are thus in a position to formulate an appropriate budget and assessment rate. The assessment rate is formulated and discussed in a public meeting. Thus, all directly affected persons have an opportunity to participate and provide input.

For the 1996–97 and subsequent crop years, the Committee recommended, and the Department approved, an assessment rate that would continue in effect from crop year to crop year indefinitely unless modified, suspended, or terminated by the Secretary upon recommendation and information submitted by the Committee or other information available to the Secretary.

The Committee met on June 24, 1997, and unanimously recommended 1997–98 expenditures of $331,960 and an assessment rate of $1.60 per salable ton of dried prunes. In comparison, last year's budgeted expenditures were $283,500; and the assessment rate was $1.50 per salable ton. The 1997–98 crop year assessment rate is increased $0.10. The primary reason for the higher budget is a comprehensive acreage survey of all California's producing counties. This acreage survey will help the industry estimate dried prune production and fulfill marketing plans.

The major expenditures recommended by the Committee for the 1997–98 crop year include: $176,300 for salaries, wages, and benefits; $30,000 for research and development; $23,000 for office rent; $21,000 for travel; $20,000 for acreage survey; $8,060 for the reserve for contingency; $5,000 for office supplies; $9,000 for rental of equipment; and $8,000 for data processing. Budgeted expenses for major items in 1996–97 were $142,120,

$30,000, $22,000, $20,000, $11,000, $8,430, $6,500, $3,800, and $6,500, respectively.

The assessment rate recommended by the Committee was derived by dividing anticipated expenses by its estimate of assessable California dried prunes for 1997–98. Assessable tonnage for the year is estimated at 207,475 salable tons which should provide $331,960 in assessment income. Income derived from handler assessments and interest income will be adequate to cover budgeted expenses. Any funds not expended by the Committee during a crop year may be used, pursuant to § 993.81(c), for a period of five months subsequent to that crop year. At the end of such period, the excess funds are returned or credited to handlers.

The assessment rate established in this rule will continue in effect indefinitely unless modified, suspended, or terminated by the Secretary upon recommendation and information submitted by the Committee or other available information.

Although this assessment rate is effective for an indefinite period, the Committee will continue to meet prior to or during each crop year to recommend a budget of expenses and consider recommendations for modification of the assessment rate. The dates and times of Committee meetings are available from the Committee or the Department. Committee meetings are open to the public and interested persons may express their views at these meetings. The Department will evaluate Committee recommendations and other available information to determine whether modification of the assessment rate is needed. Further rulemaking will be undertaken as necessary. The Committee's 1997–98 budget was approved by the Department on August 4, 1997, and those for subsequent crop years will be reviewed each year and, as appropriate, approved by the Department.

Pursuant to requirements set forth in the Regulatory Flexibility Act (RFA), the Agricultural Marketing Service (AMS) has considered the economic impact of this rule on small entities. Accordingly, AMS has prepared this final regulatory flexibility analysis.

The purpose of the RFA is to fit regulatory actions to the scale of business subject to such actions in order that small businesses will not be unduly or disproportionately burdened. Marketing orders issued pursuant to the Act, and the rules issued thereunder, are unique in that they are brought about through group action of essentially small entities acting on their own behalf. Thus, both statutes have small entity orientation and compatibility.

There are approximately 1,400 producers of dried prunes in California and approximately 21 handlers subject to regulation under the marketing order. Small agricultural producers have been defined by the Small Business Administration (13 CFR 121.601) as those having annual receipts less than $500,000, and small agricultural service firms are defined as those whose annual receipts are less than $5,000,000.

Currently, as a percentage, about 34 percent of the handlers shipped over $5,000,000 worth of dried prunes and 66 percent of the handlers shipped under $5,000,000 worth of prunes. In addition, based on acreage, production, producer prices provided by the Committee, and the total number of dried prune producers, the average annual producer revenue is approximately $136,000. The majority of handlers and producers of California dried prunes may be classified as small entities.

This rule continues the assessment rate of $1.60 per salable ton for the 1997–98 and subsequent crop years. The Committee unanimously recommended 1997–98 expenditures of $331,960 and an assessment rate of $1.60 per salable ton of California dried prunes. The assessment rate of $1.60 is $0.10 more than the 1996–97 rate. The Committee estimated assessable dried prunes in 1997–98 at 207,475 salable tons. Thus, the prior crop year assessment rate of $1.50 would only have provided $311,212 in revenue, which would not have been adequate to meet the Committee's 1997–98 budgeted expenses. The $1.60 rate should provide $331,960 in assessment income and be adequate to meet this year's expenses.

The Committee's increase from $283,500 to $331,960 in budgeted expenses for 1997–98 results primarily from increases in the following line item categories—total personnel (salaries, wages, and benefits), rental of equipment, data processing, and acreage survey. Expenses for these items for 1997–98, with last year's budgeted expenses in parenthesis, are: total personnel—$176,300 ($142,120); rental of equipment—$9,000 ($3,800); data processing—$8,000 ($6,500); and acreage survey—$20,000 ($11,000). The increase will provide wage and benefit increases for the staff. The increase in acreage survey will allow the Committee to conduct a more comprehensive dried prune acreage survey than last year. The Committee considered the alternative of conducting a smaller scale survey at less cost, but decided that a survey of all California's producing counties was needed to help the industry make production and marketing plans. The Committee feels that all of the expense levels are appropriate and reasonable.

Recent price information indicates that the grower price for the 1997–98 season should average $800 per salable ton of dried prunes. Based on estimated shipments of 207,475 salable tons, the estimated assessment revenue for the 1997–98 crop year is less than 1 percent of the total expected grower revenue.

Any funds not expended by the Committee during a crop year may be used, pursuant to § 993.81(c), for a period of five months subsequent to that crop year. At the end of such period, the excess funds are returned or credited to handlers.

While this rule imposes some additional costs on handlers, the costs are minimal and in the form of uniform assessments on all handlers. Some of the additional costs may be passed on to producers. However, these costs will be offset by the benefits derived by the operation of the marketing order. In addition, the Committee's meeting was widely publicized throughout the California dried prune industry and all interested persons were invited to attend the meeting and participate in Committee deliberations on all issues. Like all Committee meetings, the June 24, 1997, meeting was a public meeting and all entities, both large and small, were able to express views on this issue.

This rule does not impose any additional reporting or recordkeeping requirements on either small or large California dried prune handlers. As with all Federal marketing order programs, reports and forms are periodically reviewed to reduce information requirements and duplication by industry and public sector agencies.

The Department has not identified any relevant Federal rules that duplicate, overlap, or conflict with this final rule.

An interim final rule concerning this action was issued by the Department on July 29, 1997, put on display at the Office of the Federal Register on August 3, 1997, and published in the **Federal Register** on August 4, 1997 (62 FR 41808). Copies of the rule were mailed or sent via facsimile to all Committee members and dried prune handlers. Finally, the rule was made available through the Internet by the Office of the Federal Register. A 30-day comment period was provided. No comments on the interim rule were received.

After consideration of all relevant material presented, including the information and recommendation submitted by the Committee and other

available information, it is hereby found that this rule, as hereinafter set forth, will tend to effectuate the declared policy of the Act.

List of Subjects in 7 CFR Part 993

Dried prunes, Marketing agreements, Reporting and recordkeeping requirements.

PART 993—DRIED PRUNES PRODUCED IN CALIFORNIA

Accordingly, the interim final rule amending 7 CFR part 993 which was published at 62 FR 41808 on August 4, 1997, is adopted as a final rule without change.

Dated: September 17, 1997.

Robert C. Keeney,

Director, Fruit and Vegetable Division.

[FR Doc. 97–25275 Filed 9–23–97; 8:45 am]

BILLING CODE 3410–02–P

DEPARTMENT OF AGRICULTURE

Rural Housing and Community Development Service

Rural Business and Cooperative Development Service

Rural Utilities Service

Consolidated Farm Service Agency

7 CFR Part 1924

Construction and Repair

CFR Correction

In Title 7 of the Code of Federal Regulations, parts 1900 to 1939, revised as of January 1, 1997, make the following correction:

1. On page 97, in § 1924.5(h), in the fourth line, ''103–354ing'' should read ''103–354, prior to beginning''.

BILLING CODE 1505-01-D

FARM CREDIT ADMINISTRATION

12 CFR Part 615

RIN 3052–AB75

Funding and Fiscal Affairs, Loan Policies and Operations, and Funding Operations; Cumulative Voting

AGENCY: Farm Credit Administration.

ACTION: Final rule.

SUMMARY: The Farm Credit Administration (FCA), through the FCA Board (Board), issues a final rule amending § 615.5230 of its regulations to provide that a Farm Credit Bank (FCB or bank) may eliminate cumulative voting in director elections with the consent of 75 percent of the bank's association shareholders. This rule is necessary because the existing requirement of unanimous consent was unduly burdensome, complicated, and provided questionable benefits. The effect of this rule is to ease the unanimous consent requirement while maintaining significant protection for the minority interests.

DATES: This regulation shall become effective October 24, 1997, during which either or both houses of Congress are in session. Notice of the effective date will be published in the **Federal Register**.

FOR FURTHER INFORMATION CONTACT:

Gaylon J. Dykstra, Policy Analyst, Office of Policy Development and Risk Control, Farm Credit Administration, McLean, VA 22102–5090, (703) 883–4498;

or

Rebecca S. Orlich, Senior Attorney, Office of General Counsel, Farm Credit Administration, McLean, VA 22102–5090, (703) 883–4020, TDD (703) 883–4444.

SUPPLEMENTARY INFORMATION: The FCA proposed to amend § 615.5230 of its regulations on April 25, 1997 (62 FR 20131), to provide that an FCB may eliminate the cumulative voting requirement for the election of directors by a vote of 75 percent of the bank's association shareholders.[1] The proposed rule was in response to petitions from several Farm Credit System (System) institutions requesting that the FCA revise the existing unanimous consent requirement for eliminating cumulative voting. The 30-day comment period expired on May 27, 1997.

The FCA received a total of eight comment letters. Five of the letters represented seven associations (some commented jointly). The other three were from the FCB of Wichita (transmitting comments of 10 of its affiliated associations); the FCB of Texas; and the Tenth District Federation of Production Credit Associations (Federation), whose members are affiliated with the FCB of Texas.

Nine associations and the Federation supported the proposed amendment; seven associations opposed the proposed amendment. One association requested that the FCA reconsider the recommendation of a two-thirds majority made by several petitioners but supported the proposed amendment if the FCA could not support the two-thirds majority. The FCB of Texas stated that it believed that a simple majority vote of all associations should control cumulative voting, but that alternatively, the supermajority requirement should be based on the number of associations that actually vote. Two institutions specifically endorsed the proposal to accord each association one vote in a vote to eliminate cumulative voting.

The associations that supported the proposed amendment generally commented that the existing regulation was unduly burdensome, complicated, and provided questionable benefits. One commenter stated that the current regulation ''allows only one vote to void the wishes of the remainder of the District who support a less restrictive consent for change.''

Four associations that opposed the proposed amendment supported the continuation of the existing regulation. They commented that the original intent of the regulation was to provide smaller associations a meaningful vote by allowing them to cumulate their votes in elections and that this is now even more paramount because of the mergers, consolidations, and proposed joint management agreements at the district level. They further stated that it was important for all stockholders in the district banks to have the maximum opportunity to voice their respective votes and that there was ''no valid reason for an association located in a smaller geographic size to forfeit this right.''

After careful consideration of the comments, the FCA adopts the rule as proposed. The FCA continues to believe that cumulative voting provides important protection to minority interests and, consequently, should not be subject to elimination by a two-thirds majority. The 75-percent supermajority provides the proper balance among the differing opinions by easing the unanimous requirement for eliminating cumulative voting while maintaining significant protection for the minority interests.

As noted above, one commenter stated that a supermajority requirement should be a percentage of only the shareholders that participate in the vote, rather than the total number of voting shareholders. The effect of such a change would be the possibility that a smaller number of shareholders would be able to eliminate cumulative voting if some shareholders abstain. The FCA is not persuaded that such a change is appropriate.

[1] Farm Credit System associations that are shareholders of an FCB include Federal land bank associations, Federal land credit associations, production credit associations, and agricultural credit associations.

One respondent requested that the FCA clarify whether a 75-percent vote is needed to reinstate cumulative voting. The FCA does not require a supermajority to reinstate cumulative voting. The FCA believes that such a vote should be subject to the amendment procedures established by the FCB's bylaws.

List of Subjects in 12 CFR Part 615

Accounting, Agriculture, Banks, Banking, Government securities, Investments, Rural areas.

For the reasons stated in the preamble, part 615 of chapter VI, title 12 of the Code of Federal Regulations is amended as follows:

PART 615—FUNDING AND FISCAL AFFAIRS, LOAN POLICIES AND OPERATIONS, AND FUNDING OPERATIONS

1. The authority citation for part 615 continues to read as follows:

Authority: Secs. 1.5, 1.7, 1.10, 1.11, 1.12, 2.2, 2.3, 2.4, 2.5, 2.12, 3.1, 3.7, 3.11, 3.25, 4.3, 4.3A, 4.9, 4.14B, 4.25, 5.9, 5.17, 6.20, 6.26, 8.0, 8.3, 8.4, 8.6, 8.7, 8.8, 8.10, 8.12 of the Farm Credit Act (12 U.S.C. 2013, 2015, 2018, 2019, 2020, 2073, 2074, 2075, 2076, 2093, 2122, 2128, 2132, 2146, 2154, 2154a, 2160, 2202b, 2211, 2243, 2252, 2278b, 2278b–6, 2279aa, 2279aa–3, 2279aa–4, 2279aa–6, 2279aa–7, 2279aa–8, 2279aa–10, 2279aa–12); sec. 301(a) of Pub. L. 100–233, 101 Stat. 1568, 1608.

Subpart I—Issuance of Equities

2. Section 615.5230 is amended by revising paragraph (a)(2)(ii) to read as follows:

§ 615.5230 Implementation of cooperative principles.

(a) * * *

(2) * * *

(ii) Have the right to vote in the election of each director and be allowed to cumulate such votes and distribute them among the candidates in the shareholder's discretion, except that cumulative voting for directors may be eliminated if 75 percent of the associations that are shareholders of the Farm Credit Bank vote in favor of elimination. In a vote to eliminate cumulative voting, each association shall be accorded one vote.

* * * * *

Dated: September 16, 1997.

Floyd Fithian,

Secretary, Farm Credit Administration Board.

[FR Doc. 97–25262 Filed 9–23–97; 8:45 am]

BILLING CODE 6705–01–P

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

21 CFR Part 177

Indirect Food Additives: Polymers

CFR Correction

In Title 21 of the Code of Federal Regulations, parts 170 to 199, revised as of April 1, 1997, make the following correction:

On page 263, in § 177.1520, in the paragraph (b) table, the third entry under the heading ''Substance'' is corrected to read ''Polymethylsilsesquioxane (CAS Reg. No. 68554–70–1)''.

BILLING CODE 1505-01-D

DEPARTMENT OF LABOR

Occupational Safety and Health Administration

29 CFR Part 1952

Oregon State Plan; Approval of Plan Supplements; Changes in Level of Federal Enforcement, Including Umatilla Indian Reservation

AGENCY: Occupational Safety and Health Administration (OSHA), U.S. Department of Labor.

ACTION: Final rule.

SUMMARY: This document gives notice of the approval of a State-initiated plan change and assumption of Federal OSHA enforcement authority in the State of Oregon over all private sector establishments, including tribal and Indian-owned enterprises, on all Indian and non-Indian lands within the currently established boundary of the Umatilla Indian Reservation, and on lands outside the reservation that are held in trust by the Federal government for the Confederated Tribes of the Umatilla (Umatilla Tribes). Oregon OSHA will retain its enforcement jurisdiction over public sector (State and local government) employees working on these lands.

This document also gives notice of the approval of several other changes in the level of Federal enforcement in the State of Oregon. A 1991 addendum to Oregon's operational status agreement contained four changes to the circumstances under which Federal enforcement jurisdiction may be exercised within the State, including situations where Oregon is refused entry to an establishment. In addition, Oregon has assumed responsibility for worker protection at Superfund sites (except on military bases) and with regard to private contractors working on U.S. Army Corps of Engineers dam construction projects, as reflected in a 1992 Memorandum of Understanding between Federal OSHA and the State of Oregon.

OSHA is hereby amending its regulation on approved plans to reflect these changes to the level of Federal enforcement authority in Oregon, and correcting a few typographical errors.

EFFECTIVE DATE: September 24, 1997.

FOR FURTHER INFORMATION CONTACT: Bonnie Friedman, Director, Office of Public Affairs, Occupational Safety and Health Administration, Room N3647, 200 Constitution Avenue, N.W., Washington, D.C. 20210, Telephone (202) 219–8148.

SUPPLEMENTARY INFORMATION:

A. Background

Section 18 of the Occupational Safety and Health Act of 1970 (the Act), 29 U.S.C. 667, provides that States which wish to assume responsibility for developing and enforcing their own occupational safety and health standards may do so by submitting, and obtaining Federal approval of, a State plan. State plan approval occurs in stages which include initial approval under section 18(c) of the Act and, ultimately, final approval under section 18(e). In the interim, between initial approval and final approval, there is a period of concurrent Federal/State jurisdiction within a State operating an approved plan. See 29 CFR 1954.3 for guidelines and procedures.

The Oregon Occupational Safety and Health State plan was approved under section 18(c) of the Act and part 1902 of this chapter on December 28, 1972 (37 FR 28628). On January 23, 1975, OSHA and the State of Oregon entered into an Operational Status Agreement which suspended the exercise of Federal concurrent enforcement authority in all except specifically identified areas. The agreement was amended on December 12, 1983 and on November 27, 1991. Except for this last amendment, the pertinent provisions concerning level of Federal enforcement in Oregon are codified at 29 CFR 1952.105.

By letters of April 29, 1997 and July 14, 1997 from Peter DeLuca, Administrator, Oregon Occupational Safety and Health Division (OR–OSHA) to Richard Terrill, Acting Regional Administrator, the State of Oregon has requested that Federal OSHA assume enforcement authority in Oregon over

all private sector establishments, including tribal and Indian-owned enterprises, on all Indian and non-Indian lands within the currently established boundary of the Umatilla Indian Reservation, and on lands outside the reservation that are held in trust now and in the future by the Federal government for the Confederated Tribes of the Umatilla. These Umatilla Tribes trust lands currently include the Conforth Ranch near Umatilla, Oregon, lands located outside the currently established reservation boundary yet inside the 1871 Surveyed Treaty Boundary, and some parcels located outside the surveyed treaty boundary in the Indian Lakes Area of Umatilla County, Oregon. These trust lands are established on a map developed by the tribal planning office and updated periodically. Any acquisitions by the Umatilla Tribes of fee lands outside the reservation boundary that are converted in the future to trust land will be documented by the legal description in the formal request for conversion to trust land that is filed with the county. In its letters the State indicated that it will continue to provide consultation, training and technical services to all these employers and employees after the jurisdiction change. In addition, OR–OSHA will maintain enforcement jurisdiction over public sector (State and local government) employees working on these lands. Oregon also noted in its letters that Tribal or Indian-owned enterprises operating outside the established boundary of the Umatilla Indian Reservation or off tribal trust lands will also remain under OR–OSHA's enforcement jurisdiction. The State of Oregon made this request because of problems regarding the exercise of Oregon's occupational safety and health enforcement authority on Umatilla lands.

This document also gives notice of several other changes in the level of Federal enforcement in the State of Oregon. A November 27, 1991 addendum to Oregon's operational status agreement provides that Federal OSHA retains enforcement responsibility for (1) new Federal standards not yet adopted by the State; (2) situations where the State is refused entry and is unable to obtain a warrant or enforce the right to entry; (3) enforcement of unique and complex standards as determined by the Assistant Secretary; and (4) situations where the State is unable to exercise its enforcement authority fully or effectively.

In addition, OR–OSHA has assumed jurisdiction for both private and public sector employees at Superfund sites in the State of Oregon (except those on U.S. military reservations), and for private contractors working on U.S. Army Corps of Engineers dam construction projects, including reconstruction of docks and other appurtenances. Federal OSHA retains jurisdiction over all other worksites, including Superfund sites, that are located within the borders of U.S. military reservations in Oregon. These changes in the level of Federal enforcement have been clarified in an October 20, 1992 Memorandum of Understanding between Federal OSHA and the State of Oregon. The Superfund changes resulted from OSHA Instruction CPL 2, February 8, 1988, which required States with OSHA-approved State plans to cover Superfund sites.

B. Decision

After careful consideration, OSHA is approving under part 1953 of this chapter the Oregon State-initiated plan changes described above. Concurrently, OSHA is announcing its assumption of Federal enforcement authority in Oregon concerning the Confederated Tribes of the Umatilla, as specified above. OSHA is hereby amending 29 CFR part 1952 to reflect these changes in the level of Federal enforcement, correct a few typographical errors, and revise the format.

C. Location of Supplements for Inspection and Copying

A copy of the plan supplements, along with the approved plan, may be inspected and copied during normal business hours at the following locations: Office of State Programs, Occupational Safety and Health Administration, Room N–3700, 200 Constitution Avenue, N.W., Washington, D.C. 20210; Office of the Regional Administrator, Occupational Safety and Health Administration, 1111 Third Avenue, Suite 715, Seattle, Washington 98101–3212; and the Oregon Occupational Safety and Health Division, Department of Consumer and Business Services, 350 Winter Street, N.E., Room 430, Salem, Oregon 97310. For electronic copies of this **Federal Register** notice, contact OSHA's WebPage at http://www.osha.gov/.

D. Public Participation

OSHA is amending 29 CFR part 1952 to reflect changes to the level of Federal enforcement described above. In light of the discussions with the Umatilla Tribes and the State on the resumption of Federal enforcement authority concerning the Umatilla Tribes, OSHA believes that further public participation regarding this amendment to part 1952 would be unnecessary. Regarding the other amendments to the level of Federal enforcement in Oregon, these changes are procedural in nature and were effected in 1991 and 1992 upon signature of the parties; accordingly, further public participation regarding these additional amendments to part 1952 would also be unnecessary.

List of Subjects in 29 CFR Part 1952

Intergovernmental relations, Law enforcement, Occupational safety and health.

This document was prepared under the direction of Greg Watchman, Acting Assistant Secretary of Labor for Occupational Safety and Health. It is issued under Section 18 of the OSH Act (29 U.S.C. 667), 29 CFR part 1902, and Secretary of Labor's Order No. 1–90 (55 FR 9033).

Signed at Washington, DC, this 5th day of September 1997.

Greg Watchman,

Acting Assistant Secretary of Labor.

For the reasons set out in the preamble, 29 CFR part 1952, subpart D (Oregon), is hereby amended as set forth below.

PART 1952—[AMENDED]

1. The authority citation of part 1952 continues to read as follows:

Authority: Sec. 18, 84 Stat. 1608 (29 U.S.C. 667); 29 CFR part 1902, Secretary of Labor's Order No. 1–90 (55 FR 9033).

Subpart D—Oregon

2. Section 1952.105 is amended by revising paragraph (a) to read as follows:

§ 1952.105 Level of Federal enforcement.

(a) Pursuant to §§ 1902.20(b)(1)(iii) and 1954.3 of this chapter under which an operational status agreement has been entered into with Oregon, effective January 23, 1975, and as amended, effective December 12, 1983 and November 27, 1991; and based on a determination that Oregon is operational in the issues covered by the Oregon occupational safety and health plan, discretionary Federal enforcement authority under section 18(e) of the Act, 29 U.S.C. 667(c), will not be initiated with regard to Federal occupational safety and health standards in issues covered under 29 CFR parts 1910, 1926 and 1928 except as provided in this section. The U.S. Department of Labor will continue to exercise authority among other things with regard to:

(1) Complaints filed with the U.S. Department of Labor alleging

discrimination under section 11(c) of the Act (29 U.S.C. 660(c));

(2) Standards in the maritime issues covered by 29 CFR parts 1915, 1917, 1918, and 1919 (shipyards, marine terminals, longshoring, and gear certification), and enforcement of general industry and construction standards (29 CFR parts 1910 and 1926) appropriate to hazards found in these employments, which have been specifically excluded from coverage under the plan;

(3) Enforcement of new Federal standards until the State adopts a comparable standard;

(4) Enforcement in situations where the State is refused entry and is unable to obtain a warrant or enforce its right of entry;

(5) Enforcement of unique and complex standards as determined by the Assistant Secretary;

(6) Enforcement in situations when the State is unable to exercise its enforcement authority fully or effectively;

(7) Enforcement of occupational safety and health standards at worksites located within the Warm Springs Indian Reservation;

(8) Enforcement of occupational safety and health standards at all private sector establishments, including tribal and Indian-owned enterprises, on all Indian and non-Indian lands within the currently established boundary of the Umatilla Indian Reservation, and on lands outside the reservation that are held in trust by the Federal government for the Confederated Tribes of the Umatilla;

(9) Enforcement of occupational safety and health standards at worksites located within Federal military reservations, except private contractors working on U.S. Army Corps of Engineers dam construction projects, including reconstruction of docks or other appurtenances; and,

(10) Investigations and inspections for the purpose of the evaluation of the plan under sections 18 (e) and (f) of the Act (29 U.S.C. 667 (e) and (f)).

* * * * *

3. Section 1952.107 is amended by adding paragraph (f) to read as follows:

§ 1952.107 Changes to approved plans.

* * * * *

(f) Oregon's State plan changes excluding coverage under the plan of all private sector employment (including tribal and Indian-owned enterprises) on Umatilla Indian reservation or trust lands, by letters of April 29 and July 14, 1997 (see §§ 1952.105); extending coverage under the plan to Superfund sites and private contractors working on U.S. Army Corps of Engineers dam construction projects, as noted in a 1992 Memorandum of Understanding; and specifying four (4) unusual circumstances where Federal enforcement authority may be exercised, as described in a 1991 addendum to the State's operational status agreement, were approved by the Acting Assistant Secretary on September 24, 1997.

[FR Doc. 97–25307 Filed 9–23–97; 8:45 am]

BILLING CODE 4510–26–P

DEPARTMENT OF LABOR

Occupational Safety and Health Administration

29 CFR Part 1952

New Mexico State Plan; Approval of Plan Supplement; Change in Level of Federal Enforcement: Military Facilities and Indian Reservations

AGENCY: Occupational Safety and Health Administration, Labor.

ACTION: Final rule.

SUMMARY: This document gives notice of the approval of a State-initiated plan change and resumption of Federal enforcement responsibility in the State of New Mexico over private sector employment on military facilities and bases, and, to the extent permitted by applicable law, over tribal or private sector employment within any Indian reservation or lands under the control of a tribal government.

OSHA is hereby amending its regulations on approved plans to reflect this change to the level of Federal enforcement authority in New Mexico.

EFFECTIVE DATE: September 24, 1997.

FOR FURTHER INFORMATION CONTACT: Bonnie Friedman, Director, Office of Information and Consumer Affairs, Occupational Safety and Health Administration, U.S. Department of Labor, Room, N–3637, 200 Constitution Avenue, N.W., Washington, D.C. 20210, (202) 219–8148.

SUPPLEMENTARY INFORMATION:

A. Background

Section 18 of the Occupational Safety and Health Act of 1970 (The Act), 29 U.S.C. 667, provides that States which wish to assume responsibility for developing and enforcing their own occupational safety and health standards, may do so by submitting, and obtaining Federal approval of, a State plan. State plan approval occurs in stages which include initial approval under section 18(c) of the Act and, ultimately, final approval under section 18(e). In the interim, between initial approval and final approval, there is a period of concurrent Federal/State jurisdiction within a State operating an approved plan. See 29 CFR 1954.3 for guidelines and procedures.

The New Mexico Occupational Health and Safety State plan was approved under section 18(c) of the Act of 1970 and part 1902 of this chapter on December 10, 1975 (40 FR 57455), and certified by OSHA as having completed all of its developmental steps on December 4, 1984 (49 FR 48915). On December 5, 1981, OSHA and the State of New Mexico entered into an Operational Status Agreement which suspended the exercise of Federal concurrent enforcement authority in all except specifically identified areas. The pertinent provisions concerning the level of Federal enforcement in the State are codified at 29 CFR 1952.365.

By letter dated January 3, 1997, from Sam A. Rogers, Bureau Chief, Occupational Health and Safety Bureau, New Mexico Environment Department, to OSHA Regional Administrator Emzell Blanton, Jr., the State of New Mexico has requested that Federal OSHA to resume enforcement authority over private sector employment on military facilities and bases and, over tribal or private sector employment within any Indian reservation or lands under the control of a tribal government. After extensive research which identified numerous problems with regard to the exercise of New Mexico occupational health and safety enforcement authority, the State of New Mexico, for administrative convenience, will exclude coverage of all private sector employment on Federal military lands and facilities, including but not limited to Kirkland Air Force Base, Fort Bliss Military Reservation, White Sands Missile Range Military Reservation, Holloman Air Force Base, Cannon Air Force Base, Fort Wingate Military Reservation, Fort Bayard Veterans' Hospital, Albuquerque Veterans' Hospital, Santa Fe National Cemetery, etc., from under its State plan. In addition, since all of New Mexico's Indian tribes have treaties with the Federal Government and the applicability of State laws and jurisdiction on tribal reservations and other Indian owned land have been questionable at best, New Mexico will also exclude tribal or private sector employment within any Indian reservation or lands under the control of a tribal government from coverage under its State plan.

B. Location of Supplement for Inspection and Copying

A copy of the plan supplement, along with the approved plan, may be inspected and copied during normal business hours at the following locations: Office of the Regional Administrator, U.S. Department of Labor-OSHA, 525 Griffin Street, Room 602, Dallas, Texas 75202; Office of the Secretary, Environment Department, 1190 St. Francis Drive, Room 2200-North, Santa Fe, New Mexico 87503; and the Office of State Programs, 200 Constitution Avenue, N.W., Room N3700, Washington, D.C. 20210. For electronic copies of this notice, contact OSHA's WebPage at http://www.osha.gov/.

C. Public Participation

Under 29 CFR 1953.2(c), the Assistant Secretary may prescribe alternative procedures to expedite the review process or for other good cause which may be consistent with applicable laws. To assure worker protection under the OSH Act, the Assistant Secretary finds that New Mexico's State-initiated plan change requesting that Federal OSHA resume enforcement authority in New Mexico over private sector employment on military facilities and bases, and, to the extent permitted by applicable law, over tribal or private sector employment within any Indian reservation or lands under the control of a tribal government, is consistent with Federal requirements, and with commitments contained in the plan and previously made available for public comment. Good cause is therefore found for approval of this plan supplement, and further public participation is unnecessary.

D. Decision

After careful consideration, OSHA is approving under Part 1953 of this chapter, the New Mexico State-initiated plan change concerning the level of Federal enforcement authority, as described in the 1981 New Mexico Operational Status Agreement. Concurrently, OSHA is announcing its resumption of Federal enforcement authority in New Mexico over the coverage of private sector employment on Federal military facilities and bases, and, to the extent permitted by applicable law, over tribal or private sector employment within any Indian reservation or lands under the control of a tribal government. OSHA is hereby amending 29 CFR part 1952, Subpart DD, to reflect this change in the level of Federal enforcement and to revise the format.

List of Subjects in 29 CFR Part 1952

Intergovernmental relations, Law enforcement, Occupational safety and health.

This document was prepared under the direction of Greg Watchman, Acting Assistant Secretary of Labor for Occupational Safety and Health. It is issued under Section 18 of the OSH Act (29 U.S.C. 667), 29 CFR part 1902, and Secretary of Labor's Order No. 1–90 (55 FR 9033).

Signed at Washington, DC, this 18th day of September 1997.

Greg Watchman,

Acting Assistant Secretary of Labor.

For the reasons set out in the preamble 29 CFR part 1952, Subpart DD (New Mexico) is hereby amended as set forth below:

PART 1952—APPROVED STATE PLANS FOR ENFORCEMENT OF STATE STANDARDS

1. The authority citation for Part 1952 continues to read as follows:

Authority: Sec. 18, 84, Stat. 1608 (29 U.S.C. 667); 29 CFR part 1902, Secretary of Labor's Order No. 1–90 (55 FR 9033).

Subpart DD—New Mexico

2. Section 1952.365 is revised to read as follows:

§ 1952.365 Level of Federal enforcement.

(a) Pursuant to §§ 1902.20(b)(1)(iii) and 1954.3 of this chapter, under which an operational status agreement has been entered into between OSHA and New Mexico, effective October 5, 1981, and based on a determination that New Mexico is operational in issues covered by the New Mexico occupational health and safety plan, discretionary Federal enforcement authority under section 18(e) of the Act (29 U.S.C. 667(e)) will not be initiated with regard to Federal occupational safety and health standards in issues covered under 29 CFR parts 1910, 1926 and 1928 except as provided in this section. The U.S. Department of Labor will continue to exercise authority, among other things, with regard to:

(1) Complaints filed with the U.S. Department of Labor alleging discrimination under section 11(c) of the Act (29 U.S.C. 660(c));

(2) Enforcement with respect to private sector maritime employment including 29 CFR parts 1915, 1917, 1918, 1919 (shipyard employment; marine terminals; longshoring and gear certification), and general industry and construction standards (29 CFR parts 1910 and 1926) appropriate to hazards found in these employments, which issues have been specifically excluded from coverage under the State plan;

(3) Enforcement in situations where the State is refused and is unable to obtain a warrant or enforce its right of entry;

(4) Enforcement of new Federal standards until the State adopts a comparable standard;

(5) Enforcement of unique and complex standards as determined by the Assistant Secretary;

(6) Enforcement in situations when the State is temporarily unable to exercise its enforcement authority fully or effectively;

(7) Enforcement of occupational safety and health standards at all Federal and private sector establishments on military facilities and bases, including but not limited to Kirkland Air Force Base, Fort Bliss Military Reservation, White Sands Missile Range Military Reservation, Holloman Air Force Base, Cannon Air Force Base, Fort Wingate Military Reservation , Fort Bayard Veterans' Hospital, Albuquerque Veterans' Hospital, Santa Fe National Cemetery;

(8) Enforcement of occuaptional safety and health standards, to the extent permitted by applicable law, over tribal or private sector employment within any Indian reservation and lands under the control of a tribal government; and

(9) Investigations and inspections for the purpose of the evaluation of the New Mexico plan under sections 18 (e) and (f) of the Act (29 U.S.C. 667 (e) and (f)).

(b) The Regional Administrator for Occupational Safety and Health will make a prompt recommendation for the resumption of the exercise of Federal enforcement authority under section 18(e) of the Act (29 U.S.C. 667(e)) whenever, and to the degree, necessary to assure occupational safety and health protection to employees in New Mexico.

3. Section 1952.367 is amended by adding paragraph (b) to read as follows:

§ 1952.367 Changes to approved plans.

* * * * *

(b) In accordance with Subpart E of part 1953 of this chapter, New Mexico's State plan amendment, dated January 3, 1997, excluding coverage of all private sector employment on Federal military facilities and bases (see § 1952.365), and, to the extent permitted by applicable law, over tribal or private sector employment within any Indian reservation and lands under the control of a tribal government, from its State plan was approved by the Acting

Assistant Secretary on September 24, 1997.

[FR Doc. 97–25306 Filed 9–23–97; 8:45 am]
BILLING CODE 4510–26–P

DEPARTMENT OF THE TREASURY

Fiscal Service

31 CFR Part 343

[Department of the Treasury Circular, Public Debt Series No. 3–68]

Regulations Governing the Offering of United States Mortgage Guaranty Insurance Company Tax and Loss Bonds

AGENCY: Bureau of the Public Debt, Fiscal Service, Treasury.

ACTION: Final rule.

SUMMARY: The Department of the Treasury (Department) or (Treasury) is issuing in final form an amendment to its regulations governing United States Mortgage Guaranty Insurance Company Tax and Loss Bonds, referred to as tax and loss bonds. These securities are available for purchase only by companies organized and engaged in the business of writing mortgage guaranty insurance within the United States. Previously, these securities were issued in definitive (paper) form. They were only available in a ten year maturity. The Department has determined that maintaining and servicing these securities in definitive form is not cost-effective. The Department had also received many requests to offer a twenty year maturity. This final rule will reduce administrative overhead and costs by providing that on or after the effective date of the regulation, the securities will only be offered in book-entry form and that the securities may, at the option of the holder, be converted to book-entry form. It will also provide for maturities of either ten or twenty years. Minor changes to redemption notices have been added and all addresses have been updated.

EFFECTIVE DATE: September 24, 1997.

ADDRESSES: Copies are available for downloading from the Bureau of the Public Debt home page at: http://www.publicdebt.treas.gov/or may be obtained from the Division of Special Investments, 200 3rd St., P.O. Box 396, Parkersburg, WV 26106–0396.

FOR FURTHER INFORMATION CONTACT: Howard Stevens, Director, Division of Special Investments, at 304–480–7752, or Edward C. Gronseth, Deputy Chief Counsel, at 304–480–5192 or Jim Kramer-Wilt, Attorney/Adviser, Office of the Chief Counsel, at 304–480–5190.

SUPPLEMENTARY INFORMATION:

I. Background

The Department of the Treasury, Bureau of the Public Debt, is providing for the voluntary conversion of outstanding definitive tax and loss securities to book-entry form and further providing for the issuance of only book-entry securities. This conversion will improve the cost-effectiveness of this program and the ease of administering transactions involving these securities.

II. Section-by-Section Summary

Subpart A—General Information

Provisions included in the general information paragraph apply to the offering of these securities. Part 343 has been substantially rewritten. Changes from the 1968 regulations are as follows:

(1) Paragraph 343.1—This paragraph has been renumbered from 343.6.

(2) Paragraph 343.1(a)—This paragraph has been renumbered from 343.6(a). It is amended to state that copies of 31 CFR part 306 may be obtained from the Division of Special Investments.

(3) Paragraph 343.1(b)—This is a new paragraph titled Issuance. It states that on or after the effective date of this regulation, tax and loss bonds will be issued only in book-entry form on the books of the Treasury Department. The bonds will now be issued with ten or twenty year maturities designated by the purchaser and are non-interest bearing. Transfer by sale, exchange, assignment, pledge, or otherwise is prohibited. The bonds may be reissued as provided in paragraph 343.4.

(4) Paragraph 343.1(c)—This paragraph has been renumbered from 343.6(b). It is amended to state that selected Federal Reserve Banks and branches, as fiscal agents of the United States, may be designated to perform such services requested of them by the Secretary of the Treasury in connection with purchases, transactions and redemptions of these bonds.

(5) Paragraph 343.1(d)—This is a new paragraph titled Debt limit contingency. It states that the Department of the Treasury reserves the right to change or suspend the terms and conditions of the offering of tax and loss securities. This right includes provisions relating to the purchase and redemption of these bonds and any related notices. This may be done at any time the Secretary determines that the issuance of obligations sufficient to conduct the orderly financing operations of the United States cannot be made without exceeding the statutory debt limit. Announcement of such changes shall be provided by such means as the Secretary deems appropriate.

(6) 343.1(3)—This paragraph has been renumbered from 343.3. It is amended to state that upon maturity of a bond, the Department will make payment of the principal amount due to the owner. A bond scheduled for maturity on a non-business day will be redeemed on the next business day with the same force and effect as if made on the maturity date.

(7) Paragraph 343.1(f)—This paragraph is titled Reservations. It includes language of the former paragraph 343.3. It is revised to state that the Secretary of the Treasury may supplement or amend the terms of this circular or any related amendments and supplements. Transaction requests, including purchases or redemptions of bonds, are not acceptable if unsigned, inappropriately completed, or not timely submitted. The non-acceptance of inappropriate transaction requests is final. The authority of the Secretary to waive regulations under 31 CFR 306.126 applies to part 343.

(8) Paragraph 343.1(g)—This is a new paragraph titled Forms and additional information. It states that PD Form 3871 ''Application for Issue of United States Mortgage Guaranty Insurance Company Tax and Loss Bonds'', Fedwire instructions and other information will be furnished by the Division of Special Investments upon request. Interested parties may write to the Division of Special Investments or may telephone at (304) 480–7752. Application forms may also be downloaded from the Internet at Public Debt's home page at: http://www.publicdebt.treas.gov/.

Subpart B—Tax and Loss Bonds

This is a new subpart which includes information on the issue date, purchase, redemption, reissue and taxation of these bonds.

(9) Paragraph 343.2—This paragraph has been renumbered. It combines the former paragraphs 343.1(c) and 343.2. This paragraph is revised to state that the issue date must be a business day. The securities will also be issued as of the date of receipt of Form PD F 3871, along with remittance of funds for the full amount of the bond(s). Applications under this offering must be submitted to the Division of Special Investments. An application may be submitted by fax at (304) 380–7786 or (304) 480–6818, by mail or by other carrier. Applications submitted by mail should be sent by certified or registered mail.

(10) Paragraph 343.2(b)—This paragraph has been renumbered from

343.2. It is revised to state that tax and loss bonds may be purchased only from the Division of Special Investments.

(11) Paragraph 343(a)—This sub-paragraph has been renumbered from 343.3. It has been revised to state that partial redemptions of bonds may be requested in any whole dollar amount; however, an account balance of less that $1,000 will be redeemed in total. The address to which redemptions are sent is changed to the address now listed in paragraph 343.3(d).

(12) Paragraph 343.3(b)—This sub-paragraph has been renumbered from 343.3. This paragraph has been revised to state that payment will be made by the Automated Clearing House (ACH) method to the owner's account at a financial institution designated by the owner. To the extent applicable, provisions of Paragraph 357.26 on ''Payments'', and provisions of 31 CFR part 370, shall govern ACH payments made under this offering. The Department of the Treasury may employ alternate payment procedures, in lieu of ACH, in any case or class of cases where operational considerations require such action.

(13) Paragraph 343.3(c)—This is a new paragraph titled Book-entry. It states that bonds will be redeemed automatically upon maturity. Payment will be made in accordance with the ACH payment instructions on file. Redemptions prior to maturity will be made upon receipt of a redemption request. Notice of redemption prior to maturity must be submitted by letter, on company letterhead, to the Division of Special Investments or faxed to (304) 480–7786 or (304) 480–6818.

The notice must be received by the Division of Special Investments not less than three business days prior to the requested redemption date. It must contain the owner's name and Tax Identification Number, the requested redemption date, any changed payment routing instructions, the case number(s) to be redeemed, including original issue date(s) and the amount to be redeemed.

(14) Paragraph 343.3(d)—This is a new paragraph titled Registered and provides for the redemption of a registered tax and loss bond. The bond(s) with the assignment for redemption properly completed and executed must be presented to the Division of Special Investments. Payment routing instructions must also be included with the bond(s) at redemption. Upon partial redemption of a registered bond, the remaining balance will be reissued in book-entry form with the original issue and maturity date.

(15) Paragraph 343.4—This paragraph has been renumbered from 343.5.

(16) 343.4(a)—This paragraph has been renumbered from 343.5(a). It is revised to state that reissues must be sent to the Division of Special Investments. It also states that a bond will only be reissued in book-entry form but will continue to bear the same issue date and maturity as the original bond.

(17) 343.4(b)—This paragraph has been renumbered from 343.5(b).

(18) 343.4(c)—This paragraph has been renumbered from 343.5(c).

(19) 343.4(d)—This paragraph has been renumbered from 343.5(d).

(20) 343.4(e)—This is a new paragraph titled Conversion to book-entry. It provides that any owner of tax and loss bonds held in registered form after the effective date of this regulation may submit the bonds to the Division of Special Investments for conversion to book-entry.

(21)—Paragraph 343.5—This paragraph has been renumbered from 343.4.

Procedural Requirements

It has been determined that this final rule is not a significant regulatory action as defined in Executive Order 12866. Therefore, an assessment of anticipated benefits, costs and regulatory alternatives is not required.

This final rule relates to matters of public contract. The notice and public procedures requirements of the Administrative Procedure Act are inapplicable, pursuant to 5 U.S.C. 553(a)(2). As no notice of proposed rulemaking is required, the provisions of the Regulatory Flexibility Act (5 U.S.C. 601, *et seq.*) do not apply.

Because, as stated above, this regulation is being issued without prior notice and public procedure, the collection of information contained in this regulation has been reviewed under the requirements of the Paperwork Reduction Act (44 U.S.C. 3507 (j)) and, pending receipt and evaluation of public comments, approved by the Office of Management and Budget (OMB) under control number 1535–0127. An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a valid control number assigned by OMB.

Comments concerning the collection of information should be directed to OMB, Attention: Desk Officer for the Bureau of the Public Debt, Office of Information and Regulatory Affairs, Washington, DC, 20503, with copies to the Bureau of the Public Debt, Office of Administration, Graphics, Printing and Records Branch, Room 301, 200 Third Street, Parkersburg, WV 26106. Any such comments should be submitted not later than November 24, 1997. Comments are specifically requested concerning:

1. Whether the proposed collection of information is necessary for the proper performance of the functions of the Bureau of the Public Debt, including whether the information will have practical utility;

2. The accuracy of the estimated burden associated with the proposed collection of information (see below);

3. How to enhance the quality, utility and clarity of the information to be collected;

4. How to minimize the burden of complying with the proposed collection of information, including the application of automated collection techniques or other forms of information technology; and

5. Estimates of capital or start-up costs and costs of operation, maintenance, and purchase of services to provide information.

The collection of information in this regulation is in 31 CFR 343.2, 343.3 and 343.4. This information is required to establish and maintain accounts for holding Mortgage Guaranty Insurance Company Tax and Loss Bonds. This information will be used to issue a Statement of Account to the entity, establish issue and maturity dates for the bonds, and provide electronic payment routing instructions for the proceeds. The collection of information is required to obtain a benefit. The likely respondents are companies engaged in the business of writing mortgage guaranty insurance with the United States.

The estimated total annual reporting burden: 20 hours.

The estimated average annual burden hours per respondent: 15 minutes.

The estimated number of respondents: 37 respondents.

The estimated annual frequency of responses: 2.16 times.

List of Subjects in 31 CFR Part 343

United States Mortgage Guaranty Insurance Company Tax and Loss Bonds.

Dated: September 19, 1997.

Gerald Murphy,

Fiscal Assistant Secretary.

For the reasons set forth in the preamble, part 343 of Title 31 of the Code of Federal Regulations is revised to read as follows:

PART 343—REGULATIONS GOVERNING THE OFFERING OF UNITED STATES MORTGAGE GUARANTY INSURANCE COMPANY TAX AND LOSS BONDS

Subpart A—General Information

Subpart B—Tax and Loss Bonds

Authority: 5 U.S.C. 301; 26 U.S.C. 832; 31 U.S.C. 3102.

Subpart A—General Information

§ 343.0 Offering of bonds.

The Secretary of the Treasury, under the authority of the Second Liberty Bond Act, as amended, and pursuant to paragraph 832(e) of the Internal Revenue Code of 1954, offers for sale only to companies organized and engaged in the business of writing mortgage guaranty insurance within the United States, bonds of the United States designated as Mortgage Guaranty Insurance Company Tax and Loss Bonds, hereinafter referred to as tax and loss bonds. The bonds are issued in a minimum amount of $1,000 or in any larger amount, in increments of not less than $1.00. This offering will continue until terminated by the Secretary of the Treasury.

§ 343.1 General provisions.

(a) *Regulations.* Tax and loss bonds are subject to the general regulations with respect to United States securities, which are set forth in the Department of the Treasury Circular No. 300 (31 CFR part 306), to the extent applicable. Copies of the circular may be obtained from the Bureau of the Public Debt, Division of Special Investments, Room 309, 200 Third St., P.O. Box 396, Parkersburg, WV 26106–0396 or downloaded from Public Debt's home page on the Internet at: http://www.publicdebt.treas.gov/.

(b) *Issuance.* Tax and loss bonds are issued in book-entry form on the books of the Treasury that are maintained by the Division of Special Investments. The bonds are issued with 10 or 20 year maturities as designated by the purchaser. These bonds are non-interest bearing. Any transfer by sale, exchange, assignment, pledge or otherwise, is prohibited. The bonds may be reissued as provided in § 343.4.

(c) *Fiscal agents.* Selected Federal Reserve Banks and Branches, as fiscal agents of the United States, may be designated to perform such services requested of them by the Secretary of the Treasury in connection with the purchase, redemption and other transactions involving these bonds.

(d) *Debt limit contingency.* The Department of the Treasury reserves the right to change or suspend the terms and conditions of this offering, including provisions relating to the purchase of, and redemption of, the bonds as well as notices relating hereto, at any time the Secretary determines that the issuance of obligations sufficient to conduct the orderly financing operations of the United States cannot be made without exceeding the statutory debt limit. Announcement of such changes shall be provided by such means as the Secretary deems appropriate.

(e) *General redemption provisions.* A bond may not be called for redemption by the Secretary of the Treasury prior to maturity. When the bond matures, payment will be made of the principal amount due to the owner. A bond scheduled for maturity on a non-business day will be redeemed on the next business day.

(f) *Reservations.* The Secretary of the Treasury may at any time, or from time to time, supplement or amend the terms of this circular or any related amendments or supplements. Transaction requests, including purchases or redemptions of bonds, are not acceptable if unsigned, inappropriately completed, or not timely submitted. Any of these actions shall be final. The authority of the Secretary to waive regulations under 31 CFR 306.126 applies to part 343.

(g) *Forms and additional information.* The application form for subscriptions, Fedwire instructions and other information will be furnished by the Division of Special Investments upon request by writing to the Division of Special Investments or by calling (304) 480–7752. Application forms may also be downloaded from the Internet at Public Debt's home page at: http://www.publicdebt.treas.gov/.

Subpart B—Tax and Loss Bonds

§ 343.2 Issue date and purchase.

(a) *Issue date.* The issue date must be a business day. The bonds will be issued as of the date of receipt of Form PD F 3871 ''Application for Issue of United States Mortgage Guaranty Insurance Company Tax and Loss Bonds'' and receipt of the remittance of funds for the full amount of the bond(s). Applications under this offering must be submitted to the Division of Special Investments. An application may be submitted by fax at (304) 480–7786 or (304) 480–6818, by mail, or by other carrier. Applications submitted by mail should be sent by certified or registered mail.

(b) *Purchase.* Tax and loss bonds may only be purchased from the Division of Special Investments. The purchaser will instruct their financial institution to submit the exact amount of funds on the requested issue date to the Division of Special Investments via the Fedwire funds transfer system, with credit directed to the Treasury's General Account, according to wire instructions obtained from the Division of Special Investments (see § 343.1(g)). Full payment should be submitted by 3:00 P.M. Eastern time to ensure that settlement of the transaction occurs.

[Approved by the Office of Management and Budget under control number 1535–0127.]

§ 343.3 Redemption.

(a) *General.* Tax and loss bonds may not be called for redemption by the Secretary of the Treasury prior to maturity, but may be redeemed in whole or in part at the owner's option at any time after three months from issue date. The Director of the Internal Revenue Service District in which the owner's principal place of business is located will be given notice of all redemptions. Partial redemptions of bonds may be requested in any whole dollar amount; however, an account balance of less than $1,000 will be redeemed in total.

(b) *Method of payment.* Payment will be made by the Automated Clearing House (ACH) method for the owner's account at a financial institution designated by the owner. To the extent applicable, provisions of § 357.26, Payments, and provisions of 31 CFR part 370, shall govern ACH payments made under this offering. The Department of the Treasury may employ alternate payment procedures in lieu of ACH in any case or class of cases where operational considerations require such action.

(c) *Book-entry.* Bonds will be redeemed automatically upon maturity. Payment will be made in accordance with the ACH payment instructions on file. Redemptions prior to maturity will be made upon receipt of a redemption request. Notice of redemption prior to maturity must be submitted in writing on company letterhead to the Division of Special Investments, or faxed to (304) 480–7786 or to (304) 480–6818. The notice must be received by the Division of Special Investments not less than three business days prior to the requested redemption date. It must contain the owner's name and Tax Identification Number, the requested

redemption date, any changed payment routing instructions, the case number(s) to be redeemed, including original issue date(s), and the amount to be redeemed.

(d) *Registered.* To obtain redemption, a bond with the assignment for redemption properly completed and executed must be presented to the Division of Special Investments. Payment routing instructions must also be included with the bond at redemption. Upon partial redemption of a registered bond, the remaining balance will be reissued in book-entry form with the original issue and maturity date.

[Approved by the Office of Management and Budget under control number 1535–0127.]

§ 343.4 Reissue.

(a) *General.* Reissue of a tax and loss bond may be made only under the conditions specified in this paragraph. A request for reissue must be made by an officer of the beneficial owner who is authorized to assign the bond for redemption. The request must be submitted to the Division of Special Investments. A bond will only be reissued in book-entry form and will bear the same issue date and maturity as the original bond.

(b) *Correction of error.* The reissue of a bond may be made to correct an error in the original issue upon an appropriate request, supported by satisfactory proof of the error.

(c) *Change of name.* An owner whose name is changed in any legal manner after the issue of the bond should submit the bond with a request for reissue, substituting the new name for the name inscribed on the bond. The signature on the request for reissue should show the new name, the legal reason which caused the change to be made and the former name. It must be supported by satisfactory proof of the change of name.

(d) *Legal succession.* A bond registered in the name of a company which has been succeeded by another company as the result of a merger, consolidation, incorporation, reincorporation, conversion, reorganization, or which has been lawfully succeeded in any manner whereby the business or activities of the original organization are continued without substantial change, will be paid to or reissued in the name of the successor upon an appropriate request on its behalf, supported by satisfactory evidence of successorship.

(e) *Conversion to book-entry.* Although not required, any owner of tax and loss bonds held in registered form after the effective date of this regulation, may submit those bonds to the Division of Special Investments, for conversion to book-entry form.

[Approved by the Office of Management and Budget under control number 1535–0127.]

§ 343.5 Taxation

Tax and loss bonds will be exempt from all taxation now or hereafter imposed on the principal by any state or any possession of the United States or of any local taxing authority.

[FR Doc. 97–25450 Filed 9–22–97; 12:17 pm]

BILLING CODE 4810–39–P

POSTAL SERVICE

39 CFR Part 20

Implementation of Global Package Link Service

AGENCY: Postal Service.

ACTION: Interim rule with request for comments.

SUMMARY: Global Package Link Service (GPL) is an international mail service designed for mailers sending merchandise to other countries. To implement an agreement previously entered into with the postal administration of Hong Kong Special Administrative Region (Hong Kong), Hong Kong is now being added as a destination country. This action is consistent with the Postal Service's original plan to add destination countries as mailer needs dictate (59 FR 65961; December 22, 1994). GPL Service previously has been made available to Brazil, Canada, Chile, China, France, Germany, Japan, Mexico, Singapore, and the United Kingdom (U.K.). To use GPL Service, a mailer must mail at least 10,000 GPL packages a year and agree to link its information systems with the Postal Service's so that the Postal Service can extract certain information about the contents of the mailer's packages for customs clearance and other purposes. Initially, one level of service to Hong Kong will be offered to mailers. Interim regulations have been developed and are set forth below for comment and suggested revision prior to adoption in final form.

DATES: The interim regulations take effect September 24, 1997. Comments must be received on or before October 24, 1997.

ADDRESSES: Written comments should be mailed or delivered to Global Package Link Service, U.S. Postal Service, 475 L'Enfant Plaza SW, Room 370 IBU, Washington, DC 20260–6500. Copies of all written comments will be available for public inspection and photocopying at the above address between 9 a.m. and 4 p.m., Monday through Friday.

FOR FURTHER INFORMATION CONTACT: Robert Michelson at the above address. Telephone: (202) 268–5731. Marc Solnick at the above address. Telephone: (202) 268–3916.

SUPPLEMENTARY INFORMATION:

I. Introduction

One of the most important goals of the Postal Service's international mission is developing services that enhance the ability of U.S. mailers to do business in other countries. This responsibility was delineated in 39 U.S.C. 403(b)(2) which makes it the obligation of the Postal Service ''to provide types of mail service to meet the needs of different categories of mail and mail users.'' GPL is designed to more closely meet the needs of mailers who send merchandise packages from the United States to multiple international addressees by simplifying the process mailers use to prepare their packages for mailing and by reducing the costs those mailers incur in mailing merchandise to other countries.

In late 1994, with implementation of International Package Consignment Service, later renamed Global Package Link, to Japan (59 FR 65961; December 22, 1994), the Postal Service announced that, when feasible, it would expand this service to other destination countries based on mailer requests. Consistent with this policy, the Postal Service later expanded GPL by adding Canada and the United Kingdom as destination countries for qualifying mailers (61 FR 13765; March 28, 1996), subsequently expanded GPL further by announcing Brazil, Chile, and Germany as GPL destinations (62 FR 17072; April 9, 1997), added the People's Republic of China as a GPL destination (62 FR 25515; May 9, 1997), added Mexico and Singapore as GPL destinations (62 FR 45160; August 26, 1997), and added France as a GPL destination (62 FR 47558; September 10, 1997). The USPS is hereby further expanding GPL by adding Hong Kong as a GPL destination for qualifying mailers. This action implements an agreement with the postal administration of Hong Kong dated August 29, 1997.

II. GPL to Hong Kong Special Administrative Region

A. Qualifying Criteria

A mailer who wants to use GPL to Hong Kong must enter into a service agreement with the Postal Service providing for the following. First, the mailer must commit to mail at least

10,000 GPL packages per year (volumes to any GPL country may be counted toward this minimum). Second, the mailer must designate the Postal Service as its carrier of choice to Hong Kong. Third, the mailer must agree to link its information systems with the Postal Service's so that the Postal Service and the mailer can exchange data on the mailer's packages, and the Postal Service can extract, on an as-needed basis, certain information about the package by scanning the mailer-provided barcode on each package.

In general, the information that must be made available to the Postal Service includes: the order number; the package identification number; the buyer's name and address; the recipient's name and address; the total weight of the package; the total value of the package contents; the number of items in the package; and, for each item in the package, its SKU number, its value, and its country of origin. In practice, this requirement means that the mailer will have to begin the necessary systems work by the time it begins using GPL, and then will have to assist the Postal Service in completing and maintaining the information systems linkages. The Postal Service will use the extracted information to prepare the necessary customs forms and package labels and to provide user-friendly tracking and tracing.

In addition to these required commitments, which must appear in all GPL service agreements, arrangements between the Postal Service and the mailer that are technical in nature also may appear in the GPL service agreement. For instance, the service agreement may describe the electronic data interface (EDI) or proprietary file format that will be used to transmit data between the mailer and the Postal Service, as well as the frequency and schedule of transmissions. Similarly, the service agreement may describe the formats and frequencies for any exception and performance reports that the Postal Service will provide to the mailer.

B. Processing and Acceptance

If the plant at which the mailer's GPPL packages originate is located within 500 miles of a GPL processing facility, the Postal Service will verify and accept the packages at the mailer's plant and transport them to the GPL processing facility according to a schedule agreed to by the Postal Service and the mailer.

If the mailer's plant from which the GPL packages will originate is located more than 500 miles from a GPL processing facility, the mailer may choose one of two processing options:

Option One

The mailer will be required to present the packages to the Postal Service for verification at the mailer's plant and transport them as a drop shipment to a GPL processing facility according to a schedule agreed to by the Postal Service and the mailer.

Option Two

The mailer will process the packages using Postal Service-provided computer system workstations and sort and prepare the packages as required by the Postal Service. Then, the Postal Service will verify and accept the packages at the mailer's plant according to a schedule agreed to by the Postal Service and the mailer and will transport the packages to a GPL processing facility for dispatch.

C. Customs Forms

Normally, all customs forms will be automatically generated by the Postal Service computer workstations. Packages mailed to Hong Kong through a GPL facility are not required to bear customs forms when they are tendered to the Postal Service. After scanning the mailer-printed barcode on each package and correlating it with the package-specific information transmitted by the mailer, the Postal Service will print the necessary customs forms and then affix them to the mailer's packages as part of the processing operation at the GPL processing facility. If the mailer is more than 500 miles from a designated GPL facility and chooses option two, then the customs/GPL label will be affixed by the mailer using Postal Service-provided workstations.

D. Customs Clearance

The Postal Service has developed the Customs Pre-Advisory System (CPAS) as part of GPL processing. This electronic system collects package-specific data to satisfy customs requirements as packages are processed using the USPS computer workstations located at a GPL facility. The system electronically advises the USPS delivery agent and customs of the contents of each package mailed. Since this advisory information arrives before the mail, CPAS facilitates and simplifies customs clearance. Electronic pre-notification of the package contents and automatic preparation of required customs declarations assures the fastest clearance through customs in Hong Kong and reduces costs for the mailer and the Postal Service. To use CPAS, recipients of merchandise must designate the Postal Service and its customs broker as their agents for customs clearance.

Any customs duties and taxes for Hong Kong will be collected from the package recipient upon delivery in Hong Kong.

E. Delivery Options

Hong Kong

The Postal Service will offer one delivery option in Hong Kong: Premium Service. Premium Service shall receive a level of service comparable to Express Mail International Service (EMS) service in Hong Kong. It will include track and trace for individual packages and delivery throughout Hong Kong within 1 to 2 business days after clearing customs. Premium Service includes insurance, as provided under DMM S500, at no additional cost.

The Postal Service will transport Premium Service packages from the mailer's plant or designated GPL processing facility to Hong Kong via airlift. Packages will be dispatched to flights either the evening that processing is complete or the next morning. Arrival in Hong Kong is expected within 36 hours after dispatch.

F. Rates

Hong Kong

The base rates for GPL service to Hong Kong are set forth below. The Postal Service will charge the base rates, in 1-pound increments, for the first 100,000 packages mailed in a 12-month period. Once the mailer has mailed 100,000 packages, postage for the next packages mailed by the mailer in the same 12-month period will be reduced by 3% from the base rates.

GLOBAL PACKAGE LINK TO HONG KONG

Weight not over (pounds)	Annual volume first 100,000 packages—no discount premium service (dollars)
1	15.55
2	18.75
3	22.00
4	25.20
5	28.45
6	31.65
7	34.90
8	38.10
9	41.35
10	44.55
11	47.80
12	51.00
13	54.25
14	57.45
15	60.70
16	63.90

GLOBAL PACKAGE LINK TO HONG KONG—Continued

Weight not over (pounds)	Annual volume first 100,000 packages—no discount premium service (dollars)
17	67.15
18	70.35
19	73.60
20	76.80
21	80.05
22	83.25
23	86.50
24	89.70
25	92.90
26	96.15
27	99.35
28	102.60
29	105.80
30	109.05
31	112.25
32	115.50
33	118.70
34	121.95
35	125.15
36	128.40
37	131.60
38	134.85
39	138.05
40	141.30
41	144.50
42	147.75
43	150.95
44	154.20

Number of pieces in contract year	Discount
1–100,000	None.
100,001+	3 percent of base rate.

III. Conclusion

Accordingly, the Postal Service hereby adopts GPL service to Hong Kong Special Administrative Region, on an interim basis, at the rates set forth in the schedules above. Although 39 U.S.C. 407 does not require advance notice and opportunity for submission of comments, and the Postal Service is exempted by 39 U.S.C. 410(a) from the advance notice requirements of the Administrative Procedure Act regarding proposed rulemaking (5 U.S.C. 553), the Postal Service invites interested persons to submit written data, views, or arguments concerning this interim rule.

The Postal Service adopts the following amendments to the International Mail Manual, which is incorporated by reference in the Code of Federal Regulations. See 39 CFR 20.1.

List of Subjects in 39 CFR Part 20

International postal service, Foreign relations.

PART 20—-[AMENDED]

1. The authority citation for 39 CFR part 20 continues to read as follows:

Authority: 5 U.S.C. 552(a); 39 U.S.C. 401, 404, 407, 408.

2. Effective on September 24, 1997, subchapter 620 and the Individual Country Listing pages for Hong Kong in the International Mail Manual are amended as follows:

6 Special Programs

* * * * *

621.3 Availability

Global Package Link service is available only to Brazil, Canada, Chile, People's Republic of China, France, Germany, Hong Kong Special Administrative Region, Japan, Mexico, Singapore, and the United Kingdom.

* * * * *

623 General

* * * * *

623.3 Size and Weight Limits

[Replace first sentence in paragraph with:]

The weight limits for Global Package Link service are 70 pounds for Chile, China, and Germany; 66 pounds for Brazil, Canada, France, Singapore, and the United Kingdom; 64 pounds for Mexico; and 44 pounds for Japan and Hong Kong Special Administrative Region.

[Replace second sentence in paragraph with:]

The maximum length of GPL packages is 60 inches and the maximum length and girth combined is 108 inches, with the following exceptions: Maximum size for Germany is length 47 inches, height 23 inches, width 23 inches; maximum size for the People's Republic of China and Hong Kong Special Administrative Region for any one dimension is 59 inches; the sum of the length and the greatest circumference measured in a direction other than the length shall not exceed 118 inches; Japan Standard packages weighing less than 1 pound, the maximum length is 24 inches with a height and depth and length combined maximum of 36 inches.

* * * * *

626 Services Available

* * * * *

626.4 Customs

* * * * *

626.43 Payment of Customs Duty

626.431 All Countries Except Japan, the People's Republic of China, Hong Kong Special Administrative Region, and Singapore

For all countries except Japan, the People's Republic of China, Hong Kong Special Administrative Region, and Singapore, the Postal Service will arrange payment of customs duty on behalf of the recipient at the time the merchandise enters the country of destination. Any banking costs or foreign exchange fees applicable to the customs payments will be charged back to the mailer. The Postal Service will notify the mailer electronically of the amount of duty and fees paid and the mailer will reimburse the Postal Service in a manner and within a time frame agreed to by the mailer and the Postal Service. Because of the need to have funds available for customs at the time of clearance in Brazil, Chile, and Mexico, mailers must make an advance deposit prior to first mailing to cover anticipated duties and taxes in addition to postage. For subsequent mailings, this account must be replenished by the mailer after the actual amount of duties and taxes is assessed. The mailer is responsible for collecting duties and taxes from the recipient (this can be done when payment for the order is made). For Mexico, GPL mailers will pay customs the day after the shipments arrive in customs, through a pre-authorized Automated Clearing House (ACH) debit program. GPL mailers must agree to allow the USPS to debit their designated bank account through the ACH debit program to pay these charges.

626.432 Japan, the People's Republic of China, Hong Kong Special Administrative Region, and Singapore

In Japan, the People's Republic of China, Hong Kong Special Administrative Region, and Singapore, any customs duties and fees will be collected from the recipient at the time of delivery.

* * * * *

Individual Country Listing for Hong Kong:

[Add the rate chart below.]

GLOBAL PACKAGE LINK SERVICE TO HONG KONG

Weight not over (pounds)	Annual volume first 100,000 packages—no discount, premium service (dollars)
1	15.55

GLOBAL PACKAGE LINK SERVICE TO HONG KONG—Continued

Weight not over (pounds)	Annual volume first 100,000 packages—no discount, premium service (dollars)
2	18.75
3	22.00
4	25.20
5	28.45
6	31.65
7	34.90
8	38.10
9	41.35
10	44.55
11	47.80
12	51.00
13	54.25
14	57.45
15	60.70
16	63.90
17	67.15
18	70.35
19	73.60
20	76.80
21	80.05
22	83.25
23	86.50
24	89.70
25	92.90
26	96.15
27	99.35
28	102.60
29	105.80
30	109.05
31	112.25
32	115.50
33	118.70
34	121.95
35	125.15
36	128.40
37	131.60
38	134.85
39	138.05
40	141.30
41	144.50
42	147.75
43	150.95
44	154.20

Number of pieces in contract year	Discount
1–100,000	None
100,001+	3 percent of base rate.

* * * * *

Stanley F. Mires,

Chief Counsel Legislative.

[FR Doc. 97–25356 Filed 9–23–97; 8:45 am]

BILLING CODE 7710–12–P

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Part 180

[OPP–300545; FRL–5741–2]

RIN 2070–AB78

Maneb; Pesticide Tolerances for Emergency Exemptions

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: This regulation establishes time-limited tolerances for residues of maneb (manganous ethylenebisdithiocarbamate), calculated as zinc ethylenebisdithiocarbamate, and its metabolite ethylenethiourea in or on walnuts. This action is in connection with a crisis exemption declared by the state of California under section 18 of the Federal Insecticide, Fungicide, and Rodenticide Act authorizing use of the pesticides on walnuts in California. This regulation establishes a maximum permissible level for residues of maneb in this food commodity pursuant to section 408(l)(6) of the Federal Food, Drug, and Cosmetic Act, as amended by the Food Quality Protection Act of 1996. The tolerance will expire and is revoked on June 15, 1998.

DATES: This regulation is effective September 24, 1997. Objections and requests for hearings must be received by EPA on or before November 24, 1997.

ADDRESSES: Written objections and hearing requests, identified by the docket control number, [OPP–300545], must be submitted to: Hearing Clerk (1900), Environmental Protection Agency, Rm. M3708, 401 M St., SW., Washington, DC 20460. Fees accompanying objections and hearing requests shall be labeled ''Tolerance Petition Fees'' and forwarded to: EPA Headquarters Accounting Operations Branch, OPP (Tolerance Fees), P.O. Box 360277M, Pittsburgh, PA 15251. A copy of any objections and hearing requests filed with the Hearing Clerk identified by the docket control number, [OPP–300545], must also be submitted to: Public Information and Records Integrity Branch, Information Resources and Services Division (7506C), Office of Pesticide Programs, Environmental Protection Agency, 401 M St., SW., Washington, DC 20460. In person, bring a copy of objections and hearing requests to Rm. 1132, CM #2, 1921 Jefferson Davis Hwy., Arlington, VA.

A copy of objections and hearing requests filed with the Hearing Clerk may also be submitted electronically by sending electronic mail (e-mail) to: opp-docket@epamail.epa.gov. Copies of objections and hearing requests must be submitted as an ASCII file avoiding the use of special characters and any form of encryption. Copies of objections and hearing requests will also be accepted on disks in WordPerfect 5.1 file format or ASCII file format. All copies of objections and hearing requests in electronic form must be identified by the docket control number [OPP–300545]. No Confidential Business Information (CBI) should be submitted through e-mail. Electronic copies of objections and hearing requests on this rule may be filed online at many Federal Depository Libraries.

FOR FURTHER INFORMATION CONTACT: By mail: Libby Pemberton, Registration Division 7505C, Office of Pesticide Programs, Environmental Protection Agency, 401 M St., SW., Washington, DC 20460. Office location, telephone number, and e-mail address: Crystal Mall #2, 1921 Jefferson Davis Hwy., Arlington, VA, (703) 308-9364, e-mail: pemberton.libby@epamail.epa.gov.

SUPPLEMENTARY INFORMATION: EPA, on its own initiative, pursuant to section 408(e) and (l)(6) of the Federal Food, Drug, and Cosmetic Act (FFDCA), 21 U.S.C. 346a(e) and (l)(6), is establishing tolerances for residues of the fungicide maneb (manganous ethylenebisdithiocarbamate), calculated as zinc ethylenebisdithiocarbamate and its metabolite ethylenethiourea, in or on walnuts at 0.05 part per million (ppm). This tolerance will expire and is revoked on June 15, 1998. EPA will publish a document in the **Federal Register** to remove the revoked tolerance from the Code of Federal Regulations.

I. Background and Statutory Authority

The Food Quality Protection Act of 1996 (FQPA) (Pub. L. 104–170) was signed into law August 3, 1996. FQPA amends both the Federal Food, Drug, and Cosmetic Act (FFDCA), 21 U.S.C. 301 *et seq.*, and the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), 7 U.S.C. 136 *et seq* . The FQPA amendments went into effect immediately. Among other things, FQPA amends FFDCA to bring all EPA pesticide tolerance-setting activities under a new section 408 with a new safety standard and new procedures. These activities are described below and discussed in greater detail in the final rule establishing the time-limited tolerance associated with the emergency exemption for use of propiconazole on sorghum (61 FR 58135, November 13, 1996)(FRL–5572–9).

New section 408(b)(2)(A)(i) of the FFDCA allows EPA to establish a tolerance (the legal limit for a pesticide chemical residue in or on a food) only if EPA determines that the tolerance is ''safe.'' Section 408(b)(2)(A)(ii) defines ''safe'' to mean that ''there is a reasonable certainty that no harm will result from aggregate exposure to the pesticide chemical residue, including all anticipated dietary exposures and all other exposures for which there is reliable information.'' This includes exposure through drinking water and in residential settings, but does not include occupational exposure. Section 408(b)(2)(C) requires EPA to give special consideration to exposure of infants and children to the pesticide chemical residue in establishing a tolerance and to ''ensure that there is a reasonable certainty that no harm will result to infants and children from aggregate exposure to the pesticide chemical residue. . . .''

Section 18 of FIFRA authorizes EPA to exempt any Federal or State agency from any provision of FIFRA, if EPA determines that ''emergency conditions exist which require such exemption.'' This provision was not amended by FQPA. EPA has established regulations governing such emergency exemptions in 40 CFR part 166.

Section 408(l)(6) of the FFDCA requires EPA to establish a time-limited tolerance or exemption from the requirement for a tolerance for pesticide chemical residues in food that will result from the use of a pesticide under an emergency exemption granted by EPA under section 18 of FIFRA. Such tolerances can be established without providing notice or period for public comment.

Because decisions on section 18-related tolerances must proceed before EPA reaches closure on several policy issues relating to interpretation and implementation of the FQPA, EPA does not intend for its actions on such tolerance to set binding precedents for the application of section 408 and the new safety standard to other tolerances and exemptions.

II. Emergency Exemption for Maneb on Walnuts and FFDCA Tolerances

On February 24, 1997, the California Department of Pesticide Regulation availed itself of the authority to declare the existence of a crisis situation within the state, thereby authorizing use under FIFRA section 18 of maneb on walnuts for control of bacterial blight. Currently, copper based bactericides are the only registered products for control of this disease. The increase of walnut blight since 1992 is attributed to the development of a tolerance to copper based bactericides. The state has demonstrated that copper resistant bacteria have become economically important, with a potential 55,000 acres affected. EPA has authorized under FIFRA section 18 the use of maneb on walnuts for control of bacterial blight in California. After having reviewed the submission, EPA concurs that emergency conditions exist for this state.

As part of its assessment of this emergency exemption, EPA assessed the potential risks presented by residues of maneb (calculations based on its metabolite ethylenethiourea) and its metabolite in or on walnuts. In doing so, EPA considered the new safety standard in FFDCA section 408(b)(2), and EPA decided that the necessary tolerance under FFDCA section 408(l)(6) would be consistent with the new safety standard and with FIFRA section 18. Consistent with the need to move quickly on the emergency exemption in order to address an urgent non-routine situation and to ensure that the resulting food is safe and lawful, EPA is issuing this tolerance without notice and opportunity for public comment under section 408(e), as provided in section 408(l)(6). Although this tolerance will expire and is revoked on June 15, 1998, under FFDCA section 408(l)(5), residues of the pesticide not in excess of the amounts specified in the tolerance remaining in or on walnuts after that date will not be unlawful, provided the pesticide is applied in a manner that was lawful under FIFRA. EPA will take action to revoke this tolerance earlier if any experience with, scientific data on, or other relevant information on this pesticide indicate that the residues are not safe.

Because this tolerance is being approved under emergency conditions EPA has not made any decisions about whether maneb meets EPA's registration requirements for use on walnuts or whether a permanent tolerance for this use would be appropriate. Under these circumstances, EPA does not believe that this tolerance serves as a basis for registration of maneb by a State for special local needs under FIFRA section 24(c). Nor does this tolerance serve as the basis for any State other than to use this pesticide on this crop under section 18 of FIFRA without following all provisions of section 18 as identified in 40 CFR part 166. For additional information regarding the emergency exemption for maneb, contact the Agency's Registration Division at the address provided above.

III. Risk Assessment and Statutory Findings

EPA performs a number of analyses to determine the risks from aggregate exposure to pesticide residues. First, EPA determines the toxicity of pesticides based primarily on toxicological studies using laboratory animals. These studies address many adverse health effects, including (but not limited to) reproductive effects, developmental toxicity, toxicity to the nervous system, and carcinogenicity. Second, EPA examines exposure to the pesticide through the diet (e.g., food and drinking water) and through exposures that occur as a result of pesticide use in residential settings.

A. Toxicity

1. *Threshold and non-threshold effects.* For many animal studies, a dose response relationship can be determined, which provides a dose that causes adverse effects (threshold effects) and doses causing no observed effects (the ''no-observed effect level'' or ''NOEL'').

Once a study has been evaluated and the observed effects have been determined to be threshold effects, EPA generally divides the NOEL from the study with the lowest NOEL by an uncertainty factor (usually 100 or more) to determine the Reference Dose (RfD). The RfD is a level at or below which daily aggregate exposure over a lifetime will not pose appreciable risks to human health. An uncertainty factor (sometimes called a ''safety factor'') of 100 is commonly used since it is assumed that people may be up to 10 times more sensitive to pesticides than the test animals, and that one person or subgroup of the population (such as infants and children) could be up to 10 times more sensitive to a pesticide than another. In addition, EPA assesses the potential risks to infants and children based on the weight of the evidence of the toxicology studies and determines whether an additional uncertainty factor is warranted. Thus, an aggregate daily exposure to a pesticide residue at or below the RfD (expressed as 100% or less of the RfD) is generally considered acceptable by EPA. EPA generally uses the RfD to evaluate the chronic risks posed by pesticide exposure. For shorter term risks, EPA calculates a margin of exposure (MOE) by dividing the estimated human exposure into the NOEL from the appropriate animal study. Commonly, EPA finds MOEs lower than 100 to be unacceptable. This 100-fold MOE is based on the same rationale as the 100-fold uncertainty factor.

Lifetime feeding studies in two species of laboratory animals are conducted to screen pesticides for cancer effects. When evidence of increased cancer is noted in these studies, the Agency conducts a weight of the evidence review of all relevant toxicological data including short-term and mutagenicity studies and structure activity relationship. Once a pesticide has been classified as a potential human carcinogen, different types of risk assessments (e.g., linear low dose extrapolations or MOE calculation based on the appropriate NOEL) will be carried out based on the nature of the carcinogenic response and the Agency's knowledge of its mode of action.

2. *Differences in toxic effect due to exposure duration.* The toxicological effects of a pesticide can vary with different exposure durations. EPA considers the entire toxicity data base, and based on the effects seen for different durations and routes of exposure, determines which risk assessments should be done to assure that the public is adequately protected from any pesticide exposure scenario. Both short and long durations of exposure are always considered. Typically, risk assessments include ''acute'', ''short-term'', ''intermediate term'', and ''chronic'' risks. These assessments are defined by the Agency as follows.

Acute risk, by the Agency's definition, results from 1-day consumption of food and water, and reflects toxicity which could be expressed following a single oral exposure to the pesticide residues. High end exposure to food and water residues are typically assumed.

Short-term risk results from exposure to the pesticide for a period of 1-7 days, and therefore overlaps with the acute risk assessment. Historically, this risk assessment was intended to address primarily dermal and inhalation exposure which could result, for example, from residential pesticide applications. However, since enaction of FQPA, this assessment has been expanded to include both dietary and non-dietary sources of exposure, and will typically consider exposure from food, water, and residential uses when reliable data are available. In this assessment, risks from average food and water exposure, and high-end residential exposure, are aggregated. High-end exposures from all 3 sources are not typically added because of the very low probability of this occurring in most cases, and because the other conservative assumptions built into the assessment assure adequate protection of public health. However, for cases in which high-end exposure can reasonably be expected from multiple sources (e.g. frequent and widespread homeowner use in a specific geographical area), multiple high-end risks will be aggregated and presented as part of the comprehensive risk assessment/characterization. Since the toxicological endpoint considered in this assessment reflects exposure over a period of at least 7 days, an additional degree of conservatism is built into the assessment; i.e., the risk assessment nominally covers 1-7 days exposure, and the toxicological endpoint/NOEL is selected to be adequate for at least 7 days of exposure. (Toxicity results at lower levels when the dosing duration is increased.)

Intermediate-term risk results from exposure for 7 days to several months. This assessment is handled in a manner similar to the short-term risk assessment.

Chronic risk assessment describes risk which could result from several months to a lifetime of exposure. For this assessment, risks are aggregated considering average exposure from all sources for representative population subgroups including infants and children.

B. Aggregate Exposure

In examining aggregate exposure, FFDCA section 408 requires that EPA take into account available and reliable information concerning exposure from the pesticide residue in the food in question, residues in other foods for which there are tolerances, residues in groundwater or surface water that is consumed as drinking water, and other non-occupational exposures through pesticide use in gardens, lawns, or buildings (residential and other indoor uses). Dietary exposure to residues of a pesticide in a food commodity are estimated by multiplying the average daily consumption of the food forms of that commodity by the tolerance level or the anticipated pesticide residue level. The Theoretical Maximum Residue Contribution (TMRC) is an estimate of the level of residues consumed daily if each food item contained pesticide residues equal to the tolerance. In evaluating food exposures, EPA takes into account varying consumption patterns of major identifiable subgroups of consumers, including infants and children. The TMRC is a ''worst case'' estimate since it is based on the assumptions that food contains pesticide residues at the tolerance level and that 100% of the crop is treated by pesticides that have established tolerances. If the TMRC exceeds the RfD or poses a lifetime cancer risk that is greater than approximately one in a million, EPA attempts to derive a more accurate exposure estimate for the pesticide by evaluating additional types of information (anticipated residue data and/or percent of crop treated data) which show, generally, that pesticide residues in most foods when they are eaten are well below established tolerances.

Percent of crop treated estimates are derived from federal and private market survey data. Typically, a range of estimates are supplied and the upper end of this range is assumed for the exposure assessment. By using this upper end estimate of percent of crop treated, the Agency is reasonably certain that exposure is not understated for any significant subpopulation group. Further, regional consumption information is taken into account through EPA's computer-based model for evaluating the exposure of significant subpopulations including several regional groups, to pesticide residues. For this pesticide, the most highly exposed population subgroup (non-nursing infants (<1 year old) was not regionally based.

IV. Aggregate Risk Assessment and Determination of Safety

Consistent with section 408(b)(2)(D), EPA has reviewed the available scientific data and other relevant information in support of this action, EPA has sufficient data to assess the hazards of maneb and to make a determination on aggregate exposure, consistent with section 408(b)(2), for a time-limited tolerance for residues of maneb (manganous ethylenebisdithiocarbamate) calculated as zinc ethylenebisdithiocarbamate and its metabolite ethylenethiourea on walnuts at 0.05 ppm. EPA's assessment of the dietary exposures and risks associated with establishing the tolerance follows.

A. Toxicological Profile

EPA has evaluated the available toxicity data and considered its validity, completeness, and reliability as well as the relationship of the results of the studies to human risk. EPA has also considered available information concerning the variability of the sensitivities of major identifiable subgroups of consumers, including infants and children. The nature of the toxic effects caused by maneb (based on calculations on its metabolite, ethylenethiourea) are discussed below.

1. *Acute toxicity.* The acute dietary risk assessment is being conducted for ethylenethiourea (ETU) rather than maneb, since the NOEL for acute dietary risk for ETU is 4 times lower (5 mg/kg/

day) than the NOEL for acute dietary risk for maneb (20 mg/kg/day). Therefore, an acceptable MOE for ETU will also be protective of exposure to maneb. The oral developmental NOAEL (No-observed-adverse-effect-level) in rats for ETU is 5 mg/kg/day, based on a threshold finding of delayed ossification in the fetal skeletal structures at the NOAEL. The NOEL is more correctly identified as a slightly lower dose level which is close to a threshold NOAEL in the developmental study. The EDBC PD-4 stated that MOEs could be calculated from the 5 mg/kg/day NOAEL, which was close to the NOEL, and was the lowest dose tested.

2. *Short - and intermediate - term non-dietary toxicity.* OPP recommends use of the systemic NOEL of 100 mg/kg/day from the 3-week dermal toxicity study in rabbits. At the LOEL of 300 mg/kg/day, there were slightly increased thyroid weights and follicular cell hypertrophy of the thyroid.

3. *Chronic toxicity.* EPA has established the RfD for ETU at 0.00008 milligrams/kilogram/day (mg/kg/day). This RfD is based on the LOEL of 0.25 mg/kg/day due to thyroid hyperplasia in a 2-year rat feeding study, with an uncertainty factor of 3,000. The uncertainty factor of 3,000 was based on a factor of 3 for absence of a NOEL for ETU, a factor of 10 for data gaps for ETU, and a factor of 100 to take into accoutn inter- and intra-species variability.

4. *Carcinogenicity.* Maneb has been classified as a Group B2, probable human carcinogen, based on evidence of thyroid tumors in rats and liver tumors. The Q1 * for quantitation of human oral risk is 0.0601 $(mg/kg/day)^{-1}$ for the carcinogenic metabolite, ETU.

B. Exposures and Risks

1. *From food and feed uses.* Tolerances have been established (40 CFR 180.110) for the residues of maneb (manganous ethylenebisdithiocarbamate), calculated as zinc ethylenebisdithiocarbamate, in or on a variety of raw agricultural commodities, including almonds at 0.1 ppm. Risk assessments were conducted by EPA to assess dietary exposures and risks from and maneb as follows:

i. *Acute exposure and risk.* Acute dietary risk assessments are performed for a food-use pesticide if a toxicological study has indicated the possibility of an effect of concern occurring as a result of a one day or single exposure. The high end dietary exposure for the population subgroup of concern, females 13+ years old, is 0.000036 mg/kg/day, which results in an MOE of 5,000. Maximum field trial residue data values were used to calculate the MOE. This is considered a partially refined risk estimate.

ii. *Chronic exposure and risk.* The chronic exposure estimate for the general population is 0.000020 mg/kg/day and the anticipated residue contribution (ARC) as apercentage of the RfD is 24.4%.

2. *From drinking water.* There is no established Maximum Concentration Level (MCL) for residues of maneb in drinking water. No drinking water health advisory levels have been established for maneb. Environmental fate studies suggest that maneb is moderately persistent and has moderate potential to leach into ground water. Maneb could potentially leach to groundwater and run off to surface water under certain environmental conditions.

Chronic exposure and risk. Because the Agency lacks sufficient water-related exposure data to complete a comprehensive drinking water risk assessment for many pesticides, EPA has commenced and nearly completed a process to identify a reasonable yet conservative bounding figure for the potential contribution of water-related exposure to the aggregate risk posed by a pesticide. In developing the bounding figure, EPA estimated residue levels in water for a number of specific pesticides using various data sources. The Agency then applied the estimated residue levels, in conjunction with appropriate toxicological endpoints (RfD's or acute dietary NOEL's) and assumptions about body weight and consumption, to calculate, for each pesticide, the increment of aggregate risk contributed by consumption of contaminated water. While EPA has not yet pinpointed the appropriate bounding figure for exposure from contaminated water, the ranges the Agency is continuing to examine are all below the level that would cause maneb to exceed the RfD if the tolerance being considered in this document were granted. The Agency has therefore concluded that the potential exposures associated with maneb in water, even at the higher levels the Agency is considering as a conservative upper bound, would not prevent the Agency from determining that there is a reasonable certainty of no harm if the tolerance is granted.

3. *From non-dietary exposure.* Maneb is currently registered for use on the following residential non-food sites: turf, lawn, trees, and shrubs.

i. *Acute exposure and risk.* EPA generally will not include residential or other non-dietary exposure as a component of the acute exposure assessment. Theoretically, it is also possible that a residential, or other non-dietary, exposure could be combined with the acute total dietary exposure from food and water. However, the Agency does not believe that aggregating multiple exposure to large amounts of pesticide residues in the residential environment via multiple products and routes for a one day exposure is a reasonably probable event. It is highly unlikely that, in one day, an individual would have multiple high-end exposures to the same pesticide by treating their lawn and garden, treating their house via crack and crevice application, swimming in a pool, and be maximally exposed in the food and water consumed. Additionally, the concept of an acute exposure as a single exposure does not allow for including post-application exposures, in which residues decline over a period of days after application. Therefore, the Agency believes that residential exposures are more appropriately included in the short-term exposure scenario discussed below.

ii. *Chronic exposure and risk.* The Agency has concluded that a chronic residential exposure scenario does not exists for non-occupational uses of maneb.

iii. *Short- and intermediate-term exposure and risk.* There are residential uses of maneb and EPA acknowledges that there may be short and intermediate-term non-occupational exposure scenarios. The EPA has identified a toxicity endpoint for short and intermediate term non-occupational risks. However, no acceptable reliable exposure data to assess the potential risks are available at this time. Based on the level of the short and intermediate-term endpoints, the Agency does not expect the short and intermediate-term aggregate risk to exceed the level of concern.

4. *Cumulative exposure to substances with common mechanism of toxicity.* Section 408(b)(2)(D)(v) requires that, when considering whether to establish, modify, or revoke a tolerance, the Agency consider ''available information'' concerning the cumulative effects of a particular pesticide's residues and ''other substances that have a common mechanism of toxicity.'' The Agency believes that ''available information'' in this context might include not only toxicity, chemistry, and exposure data, but also scientific policies and methodologies for understanding common mechanisms of toxicity and conducting cumulative risk assessments. For most pesticides, although the Agency has some information in its files that may turn out to be helpful in eventually determining whether a pesticide shares a common

mechanism of toxicity with any other substances, EPA does not at this time have the methodologies to resolve the complex scientific issues concerning common mechanism of toxicity in a meaningful way. EPA has begun a pilot process to study this issue further through the examination of particular classes of pesticides. The Agency hopes that the results of this pilot process will increase the Agency's scientific understanding of this question such that EPA will be able to develop and apply scientific principles for better determining which chemicals have a common mechanism of toxicity and evaluating the cumulative effects of such chemicals. The Agency anticipates, however, that even as its understanding of the science of common mechanisms increases, decisions on specific classes of chemicals will be heavily dependent on chemical specific data, much of which may not be presently available.

Although at present the Agency does not know how to apply the information in its files concerning common mechanism issues to most risk assessments, there are pesticides as to which the common mechanism issues can be resolved. These pesticides include pesticides that are toxicologically dissimilar to existing chemical substances (in which case the Agency can conclude that it is unlikely that a pesticide shares a common mechanism of activity with other substances) and pesticides that produce a common toxic metabolite (in which case common mechanism of activity will be assumed).

EPA does not have, at this time, available data to determine whether maneb has a common mechanism of toxicity with other substances or how to include this pesticide in a cumulative risk assessment. Unlike other pesticides for which EPA has followed a cumulative risk approach based on a common mechanism of toxicity, maneb does not appear to produce a toxic metabolite produced by other substances. For the purposes of this tolerance action, therefore, EPA has not assumed that maneb has a common mechanism of toxicity with other substances.

C. Aggregate Risks and Determination of Safety for U.S. Population

1. *Acute risk.* The MOE for females 13+ years was calculated to be 5,000. Therefore, aggregate acute risk estimates do not exceed the Agency's level of concern.

2. *Chronic risk.* Using the ARC exposure assumptions described above, EPA has concluded that aggregate exposure to maneb from food will utilize 24.4% of the RfD for the U.S. population. The major identifiable subgroup with the highest aggregate exposure is non-nursing infants (<1 year old) discussed below. EPA generally has no concern for exposures below 100% of the RfD because the RfD represents the level at or below which daily aggregate dietary exposure over a lifetime will not pose appreciable risks to human health. Despite the potential for exposure to maneb in drinking water, EPA does not expect the aggregate exposure to exceed 100% of the RfD. EPA concludes that there is a reasonable certainty that no harm will result from aggregate exposure to maneb residues.

3. *Short- and intermediate-term risk.* Short- and intermediate-term aggregate exposure takes into account chronic dietary food and water (considered to be a background exposure level) plus indoor and outdoor residential exposure.

The MOE for the U.S. population exceeds the desired MOE, therefore, EPA has no short- and intermediate-term aggregate risk concerns.

D. Aggregate Cancer Risk for U.S. Population

The aggregate dietary cancer risk for ETU was calculated to be 1.2×10^{-6} for all the published and pending uses for maneb including this section 18 use and for all commodities which contain ETU as a result of the use of EDBC compounds. In EPA's best scientific judgement, additional potential exposure from residues in water would not increase cancer risk estimates above the Agency's level of concern.

E. Aggregate Risks and Determination of Safety for Infants and Children

1. *Safety factor for infants and children*— i. *In general.* In assessing the potential for additional sensitivity of infants and children to residues of maneb, EPA considered data from developmental toxicity studies in the rat and a two-generation reproduction study in the rat. The developmental toxicity studies are designed to evaluate adverse effects on the developing organism resulting from maternal pesticide exposure during gestation. Reproduction studies provide information relating to effects from exposure to the pesticide on the reproductive capability of mating animals and data on systemic toxicity.

FFDCA section 408 provides that EPA shall apply an additional tenfold margin of safety for infants and children in the case of threshold effects to account for pre-and post-natal toxicity and the completeness of the database unless EPA determines that a different margin of safety will be safe for infants and children. Margins of safety are incorporated into EPA risk assessments either directly through use of a MOE analysis or through using uncertainty (safety) factors in calculating a dose level that poses no appreciable risk to humans. EPA believes that reliable data support using the standard 100-fold safety factor (usually 100 for combined inter- and intra-species variability)) and not the additional tenfold safety factor when EPA has a complete data base under existing guidelines and when the severity of the effect in infants or children or the potency or unusual toxic properties of a compound do not raise concerns regarding the adequacy of the standard safety factor.

ii. *Developmental toxicity studies.* From the rat developmental study for ETU, the oral developmental NOEL is 5 mg/kg/day, based on a threshold finding of delayed ossification in the fetal skeletal structures at the NOEL.

iii. *Reproductive toxicity study.* There is no reproduction study with ETU available. In the rat reproduction study for maneb, the parental (systemic) NOEL was 6.0 mg/kg/day, based on decreased body weight and food consumption at the LOEL of 25 mg/kg/day. The developmental (pup) NOEL was 6.0 mg/kg/day, based on increased startle response at the LOEL of 25 mg/kg/day.

iv. *Pre- and post-natal sensitivity.* The rat developmental study with ETU demonstrated a special prenatal sensitivity for infants and children. The results of the rat reproduction study with maneb do not demonstrate any additional special post-natal sensitivity for infants and children, since the NOEL and LOEL for parental toxicity and pup toxicity occur at the same doses and the pup effects are not of unusual concern.

v. *Conclusion.* In the absence of a complete data base for ETU, EPA is assuming an additional tenfold safety factor to account for the possibility of special prenatal sensitivity for infants and children.

2. *Acute risk.* The acute dietary risk assessment for ETU residues demonstrated an MOE of 5,000 based on the NOEL of 5 mg/kg/day in the rat developmental study. Therefore, this calculated MOE for ETU for females 13+ years of age shows that the MOEs for this population subgroup are far in excess of the required dietary MOE of 1,000 due to ETU data gaps. Therefore, the acute dietary risks for ETU to females 13+ years of age are below EPA's level of concern. The RfD for ETU incorporates an uncertainty factor of 3,000. The uncertainty factor was based on a factor of 3 for absence of a NOEL

for ETU, a factor of 10 for data gaps needed to assess extra sensitivity to infants and children for ETU, and the normal factor of 100 for converting between and within species (EBDC PD/ 4, 3/2/92).

3. *Chronic risk.* Using the conservative exposure assumptions described above, EPA has concluded that aggregate exposure to maneb from food will utilize 78.4% of the RfD for non-nursing infants (<1 year old). EPA generally has no concern for exposures below 100% of the RfD because the RfD represents the level at or below which daily aggregate dietary exposure over a lifetime will not pose appreciable risks to human health. Despite the potential for exposure to maneb in drinking water, EPA does not expect the aggregate exposure to exceed 100% of the RfD. EPA concludes that there is a reasonable certainty that no harm will result to infants and children from aggregate exposure to maneb residues.

4. *Short- or intermediate-term risk.* The MOEs for infants and children exceed the desired MOE, therefore, EPA has no short- and intermediate-term aggregate risk concerns.

V. Other Considerations

A. Metabolism In Plants and Animals

The nature of the residue in plants is adequately understood. The residues of concern are the fungicide maneb, calculated as zinc ethylenebisdithiocarbamate, and its metabolite ethylenethiourea. Secondary residues are not expected in animal commodities as no feed items are associated with this use.

B. Analytical Enforcement Methodology

Adequate enforcement methodology is available for maneb in the Pesticide Analytical Manual (PAM) II Method III. Prior to publication in PAM II, additional enforcement methodology is available in the interim to anyone who is interested in pesticide enforcement when requested from: Calvin Furlow, Public Response and Program Resource Branch, Field Operations Division (7506C), Office of Pesticide Programs, Environmental Protection Agency, 401 M St., SW., Washington, DC 20460. Office location and telephone number: Rm 1128, CM #2, 1921 Jefferson Davis Hwy., Arlington, VA 22202, 703-305-5805.

C. Magnitude of Residues

Residues of maneb (manganous ethylenebisdithiocarbamate) calculated as zinc ethylenebisdithiocarbamate and its metabolite ethylenethiourea are not expected to exceed 0.05 ppm in or on walnuts as a result of this proposed use. Secondary residues are not expected in animal commodities as no feed items are associated with this use

D. International Residue Limits

No Codex, Canadian or Mexican maximum residue levels have been established for residues of maneb in/on walnuts.

VI. Conclusion

Therefore, the tolerance is established for residues of maneb (manganous ethylenebisdithiocarbamate), calculated as zinc ethylenebisdithiocarbamate, and its metabolite ethylenethiourea in walnuts at 0.05 ppm.

VII. Objections and Hearing Requests

The new FFDCA section 408(g) provides essentially the same process for persons to ''object'' to a tolerance regulation issued by EPA under new section 408(e) and (l)(6) as was provided in the old section 408 and in section 409. However, the period for filing objections is 60 days, rather than 30 days. EPA currently has procedural regulations which govern the submission of objections and hearing requests. These regulations will require some modification to reflect the new law. However, until those modifications can be made, EPA will continue to use those procedural regulations with appropriate adjustments to reflect the new law.

Any person may, by November 24, 1997, file written objections to any aspect of this regulation and may also request a hearing on those objections. Objections and hearing requests must be filed with the Hearing Clerk, at the address given above (40 CFR 178.20). A copy of the objections and/or hearing requests filed with the Hearing Clerk should be submitted to the OPP docket for this rulemaking. The objections submitted must specify the provisions of the regulation deemed objectionable and the grounds for the objections (40 CFR 178.25). Each objection must be accompanied by the fee prescribed by 40 CFR 180.33(i). If a hearing is requested, the objections must include a statement of the factual issues on which a hearing is requested, the requestor's contentions on such issues, and a summary of any evidence relied upon by the requestor (40 CFR 178.27). A request for a hearing will be granted if the Administrator determines that the material submitted shows the following: There is genuine and substantial issue of fact; there is a reasonable possibility that available evidence identified by the requestor would, if established, resolve one or more of such issues in favor of the requestor, taking into account uncontested claims or facts to the contrary; and resolution of the factual issues in the manner sought by the requestor would be adequate to justify the action requested (40 CFR 178.32). Information submitted in connection with an objection or hearing request may be claimed confidential by marking any part or all of that information as Confidential Business Information (CBI). Information so marked will not be disclosed except in accordance with procedures set forth in 40 CFR part 2. A copy of the information that does not contain CBI must be submitted for inclusion in the public record. Information not marked confidential may be disclosed publicly by EPA without prior notice.

VIII. Public Docket

EPA has established a record for this rulemaking under docket control number [OPP–300545] (including any comments and data submitted electronically). A public version of this record, including printed, paper versions of electronic comments, which does not include any information claimed as CBI, is available for inspection from 8:30 a.m. to 4 p.m., Monday through Friday, excluding legal holidays. The public record is located in Room 1132 of the Public Information and Records Integrity Branch, Information Resources and Services Division (7506C), Office of Pesticide Programs, Environmental Protection Agency, Crystal Mall #2, 1921 Jefferson Davis Hwy., Arlington, VA.

Electronic comments may be sent directly to EPA at:
opp-docket@epamail.epa.gov.

Electronic comments must be submitted as an ASCII file avoiding the use of special characters and any form of encryption.

The official record for this rulemaking, as well as the public version, as described above will be kept in paper form. Accordingly, EPA will transfer any copies of objections and hearing requests received electronically into printed, paper form as they are received and will place the paper copies in the official rulemaking record which will also include all comments submitted directly in writing. The official rulemaking record is the paper record maintained at the Virginia address in ''ADDRESSES'' at the beginning of this document.

IX. Regulatory Assessment Requirements

This final rule establishes a time-limited tolerance under FFDCA section

408(l)(6). The Office of Management and Budget (OMB) has exempted these types of actions from review under Executive Order 12866, entitled Regulatory Planning and Review (58 FR 51735, October 4, 1993). This final rule does not contain any information collections subject to OMB approval under the Paperwork Reduction Act (PRA), 44 U.S.C. 3501 *et seq.*, or impose any enforceable duty or contain any unfunded mandate as described under Title II of the Unfunded Mandates Reform Act of 1995 (UMRA) (Pub. L. 104–4). Nor does it require any prior consultation as specified by Executive Order 12875, entitled Enhancing the Intergovernmental Partnership (58 FR 58093, October 28, 1993), or special considerations as required by Executive Order 12898, entitled Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (59 FR 7629, February 16, 1994), or require OMB review in accordance with Executive Order 13045, entitled Protection of Children from Environmental Health Risks and Safety Risks (62 FR 19885, April 23, 1997).

In addition, since these tolerances and exemptions that are established under FFDCA section 408 (l)(6), such as the tolerance in this final rule, do not require the issuance of a proposed rule, the requirements of the Regulatory Flexibility Act (RFA) (5 U.S.C. 601 *et seq.*) do not apply. Nevertheless, the Agency has previously assessed whether establishing tolerances, exemptions from tolerances, raising tolerance levels or expanding exemptions might adversely impact small entities and concluded, as a generic matter, that there is no adverse economic impact. The factual basis for the Agency's generic certification for tolerance actions published on May 4, 1981 (46 FR 24950), and was provided to the Chief Counsel for Advocacy of the Small Business Administration.

X. Submission to Congress and the General Accounting Office

Under 5 U.S.C. 801(a)(1)(A), as added by the Small Business Regulatory Enforcement Fairness Act of 1996, the Agency has submitted a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the General Accounting Office prior to publication of this rule in today's **Federal Register**. This is not a ''major rule'' as defined by 5 U.S.C. 804(2).

List of Subjects in 40 CFR Part 180

Environmental protection, Administrative practice and procedure, Agricultural commodities, Pesticides and pests, Reporting and recordkeeping requirements.

Dated: August 29, 1997.

James Jones,

Acting Director, Registration Division, Office of Pesticide Programs.

Therefore, 40 CFR chapter I is amended as follows:

PART 180—[AMENDED]

1. The authority citation for part 180 continues to read as follows:

Authority: 21 U.S.C. 346a and 371.

2. Section 180.110 is revised to read as follows:

§ 180.110 Maneb; tolerances for residues.

(a) *General* . Tolerances for residues of the fungicide maneb (manganous ethylenebisdithiocarbamate), calculated as zinc ethylenebisdithiocarbamate, are established in or on raw agricultural commodities in the following table:

Commodity	Parts per million	Expiration/Revocation Date
Almonds	0.1	None
Apples	2	None
Apricots	10	None
Bananas (not more than 0.5 part per million) shall be in the pulp after peel is removed and discarded (preharvest application only).	4	None
Beans (dry form)	7	None
Beans (succulent form)	10	None
Broccoli	10	None
Brussels sprouts	10	None
Cabbage	10	None
Carrots	7	None
Cauliflower	10	None
Celery	5	None
Chinese cabbage	10	None
Collards	10	None
Cranberries	7	None
Cucumbers	4	None
Eggplants	7	None
Endive (escarole)	10	None
Figs	7	None
Grapes	7	None
Kale	10	None
Kohlrabi	10	None
Lettuce	10	None
Melons	4	None
Mustard greens	10	None
Nectarines	10	None
Onions	7	None
Papayas	10	None
Peaches	10	None
Peppers	7	None
Potatoes	0.1	None
Pumpkins	7	None
Rhubarb	10	None
Spinach	10	None
Sugar beet tops	45	None

Commodity	Parts per million	Expiration/Revocation Date
Summer squash	4	None
Sweet corn (kernels plus cob with husk removed)	5	None
Tomatoes	4	None
Turnip roots	7	None
Turnip tops	10	None
Winter squash	4	None

(b) *Section 18 emergency exemptions.* A time-limited tolerance is established for residues of the fungicide maneb (manganous ethylenebisdithiocarbamate), calculated as zinc ethylenebisdithiocarbamate, and its metabolite ethylenethiourea in connection with use of the pesticide under a section 18 emergency exemption granted by EPA. The tolerance will expire and is revoked on the date specified in the following table:

Commodity	Parts per million	Expiration/Revocation Date
Walnuts	0.05	6/15/98

(c) *Tolerances with regional registrations.* [Reserved]

(d) *Indirect or inadvertent residues.* [Reserved]

[FR Doc. 97–25097 Filed 9-23-97; 8:45 am]

BILLING CODE 6560–50–F

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 180 and 185

[OPP–300544; FRL–5740–8]

RIN 2070–AB78

Endothall; Pesticide Tolerances for Emergency Exemptions

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: This regulation establishes a time-limited tolerance for residues of endothall in or on canola seed. This action is in response to EPA's granting of an emergency exemption under section 18 of the Federal Insecticide, Fungicide, and Rodenticide Act authorizing use of the pesticide on canola in Minnesota. This regulation establishes a maximum permissible level for residues of endothall in this food commodity pursuant to section 408(l)(6) of the Federal Food, Drug, and Cosmetic Act, as amended by the Food Quality Protection Act of 1996. The tolerance will expire and is revoked on August 31, 1998.

DATES: This regulation is effective September 24, 1997. Objections and requests for hearings must be received by EPA on or before November 24, 1997.

ADDRESSES: Written objections and hearing requests, identified by the docket control number, [OPP–300544], must be submitted to: Hearing Clerk (1900), Environmental Protection Agency, Rm. M3708, 401 M St., SW., Washington, DC 20460. Fees accompanying objections and hearing requests shall be labeled ''Tolerance Petition Fees'' and forwarded to: EPA Headquarters Accounting Operations Branch, OPP (Tolerance Fees), P.O. Box 360277M, Pittsburgh, PA 15251. A copy of any objections and hearing requests filed with the Hearing Clerk identified by the docket control number, [OPP–300544], must also be submitted to: Public Information and Records Integrity Branch, Information Resources and Services Division (7506C), Office of Pesticide Programs, Environmental Protection Agency, 401 M St., SW., Washington, DC 20460. In person, bring a copy of objections and hearing requests to Rm. 1132, CM #2, 1921 Jefferson Davis Hwy., Arlington, VA.

A copy of objections and hearing requests filed with the Hearing Clerk may also be submitted electronically by sending electronic mail (e-mail) to: opp-docket@epamail.epa.gov. Copies of objections and hearing requests must be submitted as an ASCII file avoiding the use of special characters and any form of encryption. Copies of objections and hearing requests will also be accepted on disks in WordPerfect 5.1 file format or ASCII file format. All copies of objections and hearing requests in electronic form must be identified by the docket control number [OPP–300544]. No Confidential Business Information (CBI) should be submitted through e-mail. Electronic copies of objections and hearing requests on this rule may be filed online at many Federal Depository Libraries.

FOR FURTHER INFORMATION CONTACT: By mail: Andrea Beard, Registration Division 7505C, Office of Pesticide Programs, Environmental Protection Agency, 401 M St., SW., Washington, DC 20460. Office location, telephone number, and e-mail address: Crystal Mall #2, 1921 Jefferson Davis Hwy., Arlington, VA, (703) 308-9356, e-mail: beard.andrea@epamail.epa.gov.

SUPPLEMENTARY INFORMATION: EPA, on its own initiative, pursuant to section 408(e) and (l)(6) of the Federal Food, Drug, and Cosmetic Act (FFDCA), 21 U.S.C. 346a(e) and (l)(6), is establishing a tolerance for residues of the herbicide endothall, in or on canola seed at 0.3 part per million (ppm). This tolerance will expire and is revoked on August 31, 1998. EPA will publish a document in the **Federal Register** to remove the revoked tolerance from the Code of Federal Regulations.

I. Background and Statutory Authority

The Food Quality Protection Act of 1996 (FQPA) (Pub. L. 104–170) was signed into law August 3, 1996. FQPA amends both the Federal Food, Drug, and Cosmetic Act (FFDCA), 21 U.S.C. 301 *et seq*., and the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), 7 U.S.C. 136 *et seq* . The FQPA amendments went into effect immediately. Among other things, FQPA amends FFDCA to bring all EPA pesticide tolerance-setting activities under a new section 408 with a new safety standard and new procedures. These activities are described below and discussed in greater detail in the final rule establishing the time-limited tolerance associated with the emergency

exemption for use of propiconazole on sorghum (61 FR 58135, November 13, 1996)(FRL-5572-9).

New section 408(b)(2)(A)(i) of the FFDCA allows EPA to establish a tolerance (the legal limit for a pesticide chemical residue in or on a food) only if EPA determines that the tolerance is ''safe.'' Section 408(b)(2)(A)(ii) defines ''safe'' to mean that ''there is a reasonable certainty that no harm will result from aggregate exposure to the pesticide chemical residue, including all anticipated dietary exposures and all other exposures for which there is reliable information.'' This includes exposure through drinking water and in residential settings, but does not include occupational exposure. Section 408(b)(2)(C) requires EPA to give special consideration to exposure of infants and children to the pesticide chemical residue in establishing a tolerance and to ''ensure that there is a reasonable certainty that no harm will result to infants and children from aggregate exposure to the pesticide chemical residue. . . .''

Section 18 of FIFRA authorizes EPA to exempt any Federal or State agency from any provision of FIFRA, if EPA determines that ''emergency conditions exist which require such exemption.'' This provision was not amended by FQPA. EPA has established regulations governing such emergency exemptions in 40 CFR part 166.

Section 408(l)(6) of the FFDCA requires EPA to establish a time-limited tolerance or exemption from the requirement for a tolerance for pesticide chemical residues in food that will result from the use of a pesticide under an emergency exemption granted by EPA under section 18 of FIFRA. Such tolerances can be established without providing notice or period for public comment.

Because decisions on section 18-related tolerances must proceed before EPA reaches closure on several policy issues relating to interpretation and implementation of the FQPA, EPA does not intend for its actions on such tolerance to set binding precedents for the application of section 408 and the new safety standard to other tolerances and exemptions.

II. Emergency Exemption for Endothall on Canola and FFDCA Tolerances

The Applicant states that over the past several years, unusually cool and wet weather during the early part of the year has delayed planting of canola which allows smartweed to become established in fields, both competing with the canola plants and then contaminating the seed. The smartweed seed, about the same size as canola seed, cannot be removed using standard grain cleaning equipment. Increasing levels of conspicuous admixture result in lower grading of the canola seed, and thus lower prices for producers. In 1995, nearly all Minnesota canola was excluded from the export market due to dockage attributable to high contamination with smartweed and wild buckwheat, which significantly reduced grower revenues. The Applicant states that there are no other products registered for this use, nor are there effective alternative control measures available. The Applicant estimates that significant economic losses will be suffered by canola growers if endothall is not available for control of smartweed. EPA has authorized under FIFRA section 18 the use of endothall on canola for control of smartweeds in Minnesota. After having reviewed the submission, EPA concurs that emergency conditions exist for this state.

As part of its assessment of this emergency exemption, EPA assessed the potential risks presented by residues of endothall in or on canola seed. In doing so, EPA considered the new safety standard in FFDCA section 408(b)(2), and EPA decided that the necessary tolerance under FFDCA section 408(l)(6) would be consistent with the new safety standard and with FIFRA section 18. Consistent with the need to move quickly on the emergency exemption in order to address an urgent non-routine situation and to ensure that the resulting food is safe and lawful, EPA is issuing this tolerance without notice and opportunity for public comment under section 408(e), as provided in section 408(l)(6). Although this tolerance will expire and is revoked on August 31, 1998, under FFDCA section 408(l)(5), residues of the pesticide not in excess of the amounts specified in the tolerance remaining in or on canola seed after that date will not be unlawful, provided the pesticide is applied in a manner that was lawful under FIFRA. EPA will take action to revoke this tolerance earlier if any experience with, scientific data on, or other relevant information on this pesticide indicate that the residues are not safe.

Because this tolerance is being approved under emergency conditions EPA has not made any decisions about whether endothall meets EPA's registration requirements for use on canola or whether a permanent tolerance for this use would be appropriate. Under these circumstances, EPA does not believe that this tolerance serves as a basis for registration of endothall by a State for special local needs under FIFRA section 24(c). Nor does this tolerance serve as the basis for any State other than Minnesota to use this pesticide on this crop under section 18 of FIFRA without following all provisions of section 18 as identified in 40 CFR part 166. For additional information regarding the emergency exemption for endothall, contact the Agency's Registration Division at the address provided above.

III. Risk Assessment and Statutory Findings

EPA performs a number of analyses to determine the risks from aggregate exposure to pesticide residues. First, EPA determines the toxicity of pesticides based primarily on toxicological studies using laboratory animals. These studies address many adverse health effects, including (but not limited to) reproductive effects, developmental toxicity, toxicity to the nervous system, and carcinogenicity. Second, EPA examines exposure to the pesticide through the diet (e.g., food and drinking water) and through exposures that occur as a result of pesticide use in residential settings.

A. Toxicity

1. *Threshold and non-threshold effects.* For many animal studies, a dose response relationship can be determined, which provides a dose that causes adverse effects (threshold effects) and doses causing no observed effects (the ''no-observed effect level'' or ''NOEL'').

Once a study has been evaluated and the observed effects have been determined to be threshold effects, EPA generally divides the NOEL from the study with the lowest NOEL by an uncertainty factor (usually 100 or more) to determine the Reference Dose (RfD). The RfD is a level at or below which daily aggregate exposure over a lifetime will not pose appreciable risks to human health. An uncertainty factor (sometimes called a ''safety factor'') of 100 is commonly used since it is assumed that people may be up to 10 times more sensitive to pesticides than the test animals, and that one person or subgroup of the population (such as infants and children) could be up to 10 times more sensitive to a pesticide than another. In addition, EPA assesses the potential risks to infants and children based on the weight of the evidence of the toxicology studies and determines whether an additional uncertainty factor is warranted. Thus, an aggregate daily exposure to a pesticide residue at or below the RfD (expressed as 100% or less of the RfD) is generally considered acceptable by EPA. EPA generally uses

the RfD to evaluate the chronic risks posed by pesticide exposure. For shorter term risks, EPA calculates a margin of exposure (MOE) by dividing the estimated human exposure into the NOEL from the appropriate animal study. Commonly, EPA finds MOEs lower than 100 to be unacceptable. This 100-fold MOE is based on the same rationale as the 100-fold uncertainty factor.

Lifetime feeding studies in two species of laboratory animals are conducted to screen pesticides for cancer effects. When evidence of increased cancer is noted in these studies, the Agency conducts a weight of the evidence review of all relevant toxicological data including short-term and mutagenicity studies and structure activity relationship. Once a pesticide has been classified as a potential human carcinogen, different types of risk assessments (e.g., linear low dose extrapolations or MOE calculation based on the appropriate NOEL) will be carried out based on the nature of the carcinogenic response and the Agency's knowledge of its mode of action.

2. *Differences in toxic effect due to exposure duration.* The toxicological effects of a pesticide can vary with different exposure durations. EPA considers the entire toxicity data base, and based on the effects seen for different durations and routes of exposure, determines which risk assessments should be done to assure that the public is adequately protected from any pesticide exposure scenario. Both short and long durations of exposure are always considered. Typically, risk assessments include ''acute'', ''short-term'', ''intermediate term'', and ''chronic'' risks. These assessments are defined by the Agency as follows.

Acute risk, by the Agency's definition, results from 1-day consumption of food and water, and reflects toxicity which could be expressed following a single oral exposure to the pesticide residues. High end exposure to food and water residues are typically assumed.

Short-term risk results from exposure to the pesticide for a period of 1-7 days, and therefore overlaps with the acute risk assessment. Historically, this risk assessment was intended to address primarily dermal and inhalation exposure which could result, for example, from residential pesticide applications. However, since enaction of FQPA, this assessment has been expanded to include both dietary and non-dietary sources of exposure, and will typically consider exposure from food, water, and residential uses when reliable data are available. In this assessment, risks from average food and water exposure, and high-end residential exposure, are aggregated. High-end exposures from all 3 sources are not typically added because of the very low probability of this occurring in most cases, and because the other conservative assumptions built into the assessment assure adequate protection of public health. However, for cases in which high-end exposure can reasonably be expected from multiple sources (e.g. frequent and widespread homeowner use in a specific geographical area), multiple high-end risks will be aggregated and presented as part of the comprehensive risk assessment/characterization. Since the toxicological endpoint considered in this assessment reflects exposure over a period of at least 7 days, an additional degree of conservatism is built into the assessment; i.e., the risk assessment nominally covers 1-7 days exposure, and the toxicological endpoint/NOEL is selected to be adequate for at least 7 days of exposure. (Toxicity results at lower levels when the dosing duration is increased.)

Intermediate-term risk results from exposure for 7 days to several months. This assessment is handled in a manner similar to the short-term risk assessment.

Chronic risk assessment describes risk which could result from several months to a lifetime of exposure. For this assessment, risks are aggregated considering average exposure from all sources for representative population subgroups including infants and children.

B. Aggregate Exposure

In examining aggregate exposure, FFDCA section 408 requires that EPA take into account available and reliable information concerning exposure from the pesticide residue in the food in question, residues in other foods for which there are tolerances, residues in groundwater or surface water that is consumed as drinking water, and other non-occupational exposures through pesticide use in gardens, lawns, or buildings (residential and other indoor uses). Dietary exposure to residues of a pesticide in a food commodity are estimated by multiplying the average daily consumption of the food forms of that commodity by the tolerance level or the anticipated pesticide residue level. The Theoretical Maximum Residue Contribution (TMRC) is an estimate of the level of residues consumed daily if each food item contained pesticide residues equal to the tolerance. In evaluating food exposures, EPA takes into account varying consumption patterns of major identifiable subgroups of consumers, including infants and children. The TMRC is a ''worst case'' estimate since it is based on the assumptions that food contains pesticide residues at the tolerance level and that 100% of the crop is treated by pesticides that have established tolerances. If the TMRC exceeds the RfD or poses a lifetime cancer risk that is greater than approximately one in a million, EPA attempts to derive a more accurate exposure estimate for the pesticide by evaluating additional types of information (anticipated residue data and/or percent of crop treated data) which show, generally, that pesticide residues in most foods when they are eaten are well below established tolerances.

Percent of crop treated estimates are derived from federal and private market survey data. Typically, a range of estimates are supplied and the upper end of this range is assumed for the exposure assessment. By using this upper end estimate of percent of crop treated, the Agency is reasonably certain that exposure is not understated for any significant subpopulation group. Further, regional consumption information is taken into account through EPA's computer-based model for evaluating the exposure of significant subpopulations including several regional groups, to pesticide residues. For this pesticide, the most highly exposed population subgroup (Children 1 - 6 years old) was not regionally based.

IV. Aggregate Risk Assessment and Determination of Safety

Consistent with section 408(b)(2)(D), EPA has reviewed the available scientific data and other relevant information in support of this action, EPA has sufficient data to assess the hazards of endothall and to make a determination on aggregate exposure, consistent with section 408(b)(2), for a time-limited tolerance for residues of endothall on canola seed at 0.3 ppm. EPA's assessment of the dietary exposures and risks associated with establishing the tolerance follows.

A. Toxicological Profile

EPA has evaluated the available toxicity data and considered its validity, completeness, and reliability as well as the relationship of the results of the studies to human risk. EPA has also considered available information concerning the variability of the sensitivities of major identifiable subgroups of consumers, including infants and children. The nature of the

toxic effects caused by endothall are discussed below.

1. *Acute toxicity.* An acute dietary risk endpoint has not been identified, and an acute risk assessment is not required.

2. *Short - and intermediate - term toxicity.* For dermal short- and intermediate- term MOE calculations, the NOEL of 40.0 mg/kg/day (no effects seen at this, the Highest Dose Tested) was chosen from the 21-day dermal toxicity study in rats.

3. *Chronic toxicity.* EPA has established the RfD for endothall at 0.02 milligrams/kilogram/day (mg/kg/day). This RfD is based on a 2-year feeding study in dogs with an NOEL of 2.0 mg/kg/day, using an uncertainty factor of 100. At the lowest observed effect level (LOEL) of 6.0 mg/kg/day, increased relative and absolute weight of the stomach and small intestine was observed.

4. *Carcinogenicity.* Endothall has not yet been reviewed by the Cancer Peer Review Committee. However, review of available data indicate that tumors observed in both the rat and the mouse studies are within the historical control range for these species. Thus, there is no concern for carcinogenic effects at this time.

B. Exposures and Risks

1. *From food and feed uses.* Tolerances have been established (40 CFR 180.293) for the residues of endothall, in or on a variety of raw agricultural commodities, including rice grain and straw, potatoes, hops, cottonseed at levels from 0.05 to 0.1 ppm; and 40 CFR 180.319, interim tolerance for sugarbeets at 0.2 ppm. Risk assessments were conducted by EPA to assess dietary exposures and risks from endothall as follows:

Chronic exposure and risk. In conducting this chronic dietary risk assessment, refinements used included percent of crop treated figures for all crops except canola and sugar beets. Aside from this, the conservative assumptions were made that 100% of the crops would have residues at tolerance levels. Using these conservative assumptions, the ARC estimates occupy the following percentages of the RfD: Overall U.S. Population, 1.1%; Nursing Infants <1 Year Old, 0.6%; Non-Nursing Infants <1 Year Old, 1.5%; Children Age 1-6 Years (highest exposed subgroup), 2.1%; and Children 7-12 Years Old, 1.6%. Although these estimates are well below levels of concern, additional refinement using anticipated residue levels and percent of crop treated information for all crops would result in much lower dietary exposure estimates.

2. *From drinking water.* There is an interim tolerance for residues of endothall in potable water at 0.2 ppm, and EPA has also established a Maximum Contaminant Level (MCL) for water at 0.1 mg/L.

Chronic exposure and risk. Chronic exposure levels for the U.S. population and children were calculated assuming concentrations at the MCL of 100.0 µg/L in drinking water; adult and child body weights of 70 and 10 kg, respectively; and adult and child drinking water consumption of 2 and 1 L per day, respectively. Based on these assumptions, adult exposure was calculated to be 2.9×10^{-3} mg/kg/day, and child exposure to be 1.0×10^{-2} mg/kg/day. These exposure values correspond to 14.3% of the RfD for adults, and 50.0% of the RfD for children.

3. *From non-dietary exposure.* Endothall is currently registered for use on the following residential non-food sites: Granular formulations of endothall are applied to lakes and ponds that have recreational uses. Concentrations of endothall ranging from 0.5 to 5 mg/L are used to control various aquatic weeds.

i. *Chronic exposure and risk.* Chronic non-dietary exposure is not expected with this use. Therefore, it is not necessary to conduct a chronic risk assessment, in association with the non-dietary exposure, which is expected to be short- and intermediate-term. This risk is discussed in the following paragraph.

ii. *Short- and intermediate-term exposure and risk.* The non-dietary swimmer exposure of a child (1-6 years), while swimming in water treated with this chemical is estimated as follows: Dermal Exposure = (Concentration of endothall) x (Surface area of child) x (hours exposed) x (body weight (kg)). Assumptions were used of 0.5 - 5 mg/L endothall concentrations in the water, surface area and body weight of the child 9,000 cm^2, and 22 kg, respectively. Based upon these assumptions, dermal exposure is estimated at a range of 0.0044 to 0.044 mg/kg/day. Oral Exposure = (Concentration of endothall) x (Ingestion rate of water) x (exposure time) / (body weight(kg)). Assumptions were 0.05 L/hr ingestion, 5 hr/day exposure time, and 22 kg bodyweight. Based on these assumptions, oral exposure is estimated at a range of 0.0057 to 0.057 mg/kg/day. Total Exposure, both dermal and oral, for a child 1-6 years old, is estimated at 0.01 to 0.1 mg/kg/day. From these exposure estimates, the MOE for short-term and intermediate-term exposure is calculated to be a range of 400 to 4,000.

4. *Cumulative exposure to substances with common mechanism of toxicity.* Section 408(b)(2)(D)(v) requires that, when considering whether to establish, modify, or revoke a tolerance, the Agency consider ''available information'' concerning the cumulative effects of a particular pesticide's residues and ''other substances that have a common mechanism of toxicity.'' The Agency believes that ''available information'' in this context might include not only toxicity, chemistry, and exposure data, but also scientific policies and methodologies for understanding common mechanisms of toxicity and conducting cumulative risk assessments. For most pesticides, although the Agency has some information in its files that may turn out to be helpful in eventually determining whether a pesticide shares a common mechanism of toxicity with any other substances, EPA does not at this time have the methodologies to resolve the complex scientific issues concerning common mechanism of toxicity in a meaningful way. EPA has begun a pilot process to study this issue further through the examination of particular classes of pesticides. The Agency hopes that the results of this pilot process will increase the Agency's scientific understanding of this question such that EPA will be able to develop and apply scientific principles for better determining which chemicals have a common mechanism of toxicity and evaluating the cumulative effects of such chemicals. The Agency anticipates, however, that even as its understanding of the science of common mechanisms increases, decisions on specific classes of chemicals will be heavily dependent on chemical specific data, much of which may not be presently available.

Although at present the Agency does not know how to apply the information in its files concerning common mechanism issues to most risk assessments, there are pesticides as to which the common mechanism issues can be resolved. These pesticides include pesticides that are toxicologically dissimilar to existing chemical substances (in which case the Agency can conclude that it is unlikely that a pesticide shares a common mechanism of activity with other substances) and pesticides that produce a common toxic metabolite (in which case common mechanism of activity will be assumed).

EPA does not have, at this time, available data to determine whether endothall has a common mechanism of toxicity with other substances or how to include this pesticide in a cumulative risk assessment. Unlike other pesticides

for which EPA has followed a cumulative risk approach based on a common mechanism of toxicity, EPA cannot at this time determine whether endothall produces a toxic metabolite produced by other substances. For the purposes of this tolerance action, therefore, EPA has not assumed that endothall has a common mechanism of toxicity with other substances.

C. Aggregate Risks and Determination of Safety for U.S. Population

1. *Chronic risk.* Using the ARC exposure assumptions described above, EPA has concluded that aggregate exposure to endothall from food and drinking water will utilize 15.4% of the RfD for the U.S. population. The major identifiable subgroup with the highest aggregate exposure is Children 1 to 6 Years Old, discussed below. EPA generally has no concern for exposures below 100% of the RfD because the RfD represents the level at or below which daily aggregate dietary exposure over a lifetime will not pose appreciable risks to human health. Despite the potential for exposure to endothall from non-dietary, non-occupational exposure, EPA does not expect the aggregate exposure to exceed 100% of the RfD. EPA concludes that there is a reasonable certainty that no harm will result from acute aggregate exposure to endothall residues.

2. *Short- and intermediate-term risk.* Short- and intermediate-term aggregate exposure takes into account chronic dietary food and water (considered to be a background exposure level) plus indoor and outdoor residential exposure.

Based upon assumptions given above, the MOEs for adults from exposures contributed by food plus drinking water plus swimming exposure, range from 384 to 3,033. For children, the MOEs range from 359 to 1,950. Since these MOEs are well above the acceptable level of 100, EPA concludes that there is reasonable certainty that no harm will result from short- and intermediate-term exposure to endothall residues.

D. Aggregate Risks and Determination of Safety for Infants and Children

1. *Safety factor for infants and children*— i. *In general.* In assessing the potential for additional sensitivity of infants and children to residues of endothall, EPA considered data from developmental toxicity studies in the rat and rabbit and a two-generation reproduction study in the rat. The developmental toxicity studies are designed to evaluate adverse effects on the developing organism resulting from maternal pesticide exposure during gestation. Reproduction studies provide information relating to effects from exposure to the pesticide on the reproductive capability of mating animals and data on systemic toxicity.

FFDCA section 408 provides that EPA shall apply an additional tenfold margin of safety for infants and children in the case of threshold effects to account for pre-and post-natal toxicity and the completeness of the database unless EPA determines that a different margin of safety will be safe for infants and children. Margins of safety are incorporated into EPA risk assessments either directly through use of a MOE analysis or through using uncertainty (safety) factors in calculating a dose level that poses no appreciable risk to humans. EPA believes that reliable data support using the standard 100-fold safety factor (usually 100 for combined inter- and intra-species variability)) and not the additional tenfold safety factor when EPA has a complete data base under existing guidelines and when the severity of the effect in infants or children or the potency or unusual toxic properties of a compound do not raise concerns regarding the adequacy of the standard safety factor.

ii. *Developmental toxicity studies.* In the developmental study in rats, the maternal (systemic) NOEL was 12.5 mg/kg/day, based upon decreased body weight gain at the LOEL of 25.0 mg/kg/day. The developmental (fetal) NOEL was 25.0 mg/kg/day, the highest dose tested.

iii. *Reproductive toxicity study.* In the 2-generation reproductive toxicity study in rats, the parental (systemic) NOEL was not determined since there were proliferative lesions of the gastric epithelium in both sexes at the lowest dose tested (2.0 and 2.3 mg/kg/day for males and females respectively). The developmental/reproductive (pup) NOEL was 9.4 mg/kg/day, based on decreased pup body weights (both sexes) at the LOEL of 60.0 mg/kg/day.

iv. *Pre- and post-natal sensitivity.* The available developmental and reproductive toxicity data available do not indicate that there are pre- or post-natal toxicity concerns for infants and children.

v. *Conclusion.* Based on the currently available developmental and reproductive toxicity studies discussed above and best scientific judgment of EPA scientists, there does not appear to be an extra sensitivity for pre- or post-natal effects, and an additional tenfold safety factor is not warranted.

2. *Chronic risk.* Using the conservative exposure assumptions described above, EPA has concluded that aggregate exposure to endothall from food and drinking water will utilize 52.1% of the RfD for infants and children. EPA generally has no concern for exposures below 100% of the RfD because the RfD represents the level at or below which daily aggregate dietary exposure over a lifetime will not pose appreciable risks to human health. Despite the potential for exposure to endothall from non-dietary, non-occupational exposure, EPA does not expect the aggregate exposure to exceed 100% of the RfD. EPA concludes that there is a reasonable certainty that no harm will result to infants and children from aggregate exposure to endothall residues.

3. *Short- or intermediate-term risk.* Granular formulations of endothall are applied to lakes and ponds that have recreational uses. Concentrations of endothall ranging from 0.5 to 5 mg/L are used to control various aquatic weeds.

Short- and intermediate-term exposure and risk. The non-dietary swimmer exposure estimate for a child (1-6 years), while swimming in water treated with this chemical, through both dermal and oral exposure, results in MOEs from 400 to 4,000 (further discussed above).

V. Other Considerations

A. Metabolism In Plants and Animals

The qualitative nature of the residues of endothall in plants appears to be adequately understood; the nature of the residue in animals is adequately understood based on acceptable studies with lactating goats and laying hens. The residue to be regulated is endothall *per se*, as stated in 40 CFR 180.293 .

B. Analytical Enforcement Methodology

Adequate analytical methods are available for tolerance enforcement in plant commodities (a GC method with nitrogen detection is available in the Pesticide Analytical Manual (PAM) Vol. II, as Method I.) No tolerances have been established for animal commodities, or are required with this section 18 use; therefore, no analytical methods are required for livestock commodities.

C. Magnitude of Residues

Residues of endothall are not expected to exceed 0.3 ppm in canola and in its processed products canola oil and meal, as a result of this use. Secondary resides are not expected in animal commodities.

D. International Residue Limits

There are no Codex, Canadian, or Mexican Maximum Residue Levels (MRLs) established for endothall on canola.

E. Rotational Crop Restrictions

There are no rotational crop restrictions with this use or on the federal label for endothall.

VI. Conclusion

Therefore, the tolerance is established for residues of endothall in canola seed at 0.3 ppm.

VII. Objections and Hearing Requests

The new FFDCA section 408(g) provides essentially the same process for persons to ''object'' to a tolerance regulation issued by EPA under new section 408(e) and (l)(6) as was provided in the old section 408 and in section 409. However, the period for filing objections is 60 days, rather than 30 days. EPA currently has procedural regulations which govern the submission of objections and hearing requests. These regulations will require some modification to reflect the new law. However, until those modifications can be made, EPA will continue to use those procedural regulations with appropriate adjustments to reflect the new law.

Any person may, by November 24, 1997, file written objections to any aspect of this regulation and may also request a hearing on those objections. Objections and hearing requests must be filed with the Hearing Clerk, at the address given above (40 CFR 178.20). A copy of the objections and/or hearing requests filed with the Hearing Clerk should be submitted to the OPP docket for this rulemaking. The objections submitted must specify the provisions of the regulation deemed objectionable and the grounds for the objections (40 CFR 178.25). Each objection must be accompanied by the fee prescribed by 40 CFR 180.33(i). If a hearing is requested, the objections must include a statement of the factual issues on which a hearing is requested, the requestor's contentions on such issues, and a summary of any evidence relied upon by the requestor (40 CFR 178.27). A request for a hearing will be granted if the Administrator determines that the material submitted shows the following: There is genuine and substantial issue of fact; there is a reasonable possibility that available evidence identified by the requestor would, if established, resolve one or more of such issues in favor of the requestor, taking into account uncontested claims or facts to the contrary; and resolution of the factual issues in the manner sought by the requestor would be adequate to justify the action requested (40 CFR 178.32). Information submitted in connection with an objection or hearing request may be claimed confidential by marking any part or all of that information as Confidential Business Information (CBI). Information so marked will not be disclosed except in accordance with procedures set forth in 40 CFR part 2. A copy of the information that does not contain CBI must be submitted for inclusion in the public record. Information not marked confidential may be disclosed publicly by EPA without prior notice.

VIII. Public Docket

EPA has established a record for this rulemaking under docket control number [OPP–300544] (including any comments and data submitted electronically). A public version of this record, including printed, paper versions of electronic comments, which does not include any information claimed as CBI, is available for inspection from 8:30 a.m. to 4 p.m., Monday through Friday, excluding legal holidays. The public record is located in Room 1132 of the Public Information and Records Integrity Branch, Information Resources and Services Division (7506C), Office of Pesticide Programs, Environmental Protection Agency, Crystal Mall #2, 1921 Jefferson Davis Hwy., Arlington, VA.

Electronic comments may be sent directly to EPA at:

opp-docket@epamail.epa.gov.

Electronic comments must be submitted as an ASCII file avoiding the use of special characters and any form of encryption.

The official record for this rulemaking, as well as the public version, as described above will be kept in paper form. Accordingly, EPA will transfer any copies of objections and hearing requests received electronically into printed, paper form as they are received and will place the paper copies in the official rulemaking record which will also include all comments submitted directly in writing. The official rulemaking record is the paper record maintained at the Virginia address in ''ADDRESSES'' at the beginning of this document.

IX. Regulatory Assessment Requirements

This final rule establishes a time-limited tolerance under FFDCA section 408(1)(6). The Office of Management and Budget (OMB) has exempted these types of actions from review under Executive Order 12866, entitled Regulatory Planning and Review (58 FR 51735, October 4, 1993). This final rule does not contain any information collections subject to OMB approval under the Paperwork Reduction Act (PRA), 44 U.S.C. 3501 *et seq.*, or impose any enforceable duty or contain any unfunded mandate as described under Title II of the Unfunded Mandates Reform Act of 1995 (UMRA) (Pub. L. 104–4). Nor does it require any prior consultation as specified by Executive Order 12875, entitled Enhancing the Intergovernmental Partnership (58 FR 58093, October 28, 1993), or special considerations as required by Executive Order 12898, entitled Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (59 FR 7629, February 16, 1994), or require OMB review in accordance with Executive Order 13045, entitled Protection of Children from Environmental Health Risks and Safety Risks (62 FR 19885, April 23, 1997).

In addition, since these tolerances and exemptions that are established under FFDCA section 408 (l)(6), such as the tolerance in this final rule, do not require the issuance of a proposed rule, the requirements of the Regulatory Flexibility Act (RFA) (5 U.S.C. 601 *et seq.*) do not apply. Nevertheless, the Agency has previously assessed whether establishing tolerances, exemptions from tolerances, raising tolerance levels or expanding exemptions might adversely impact small entities and concluded, as a generic matter, that there is no adverse economic impact. The factual basis for the Agency's generic certification for tolerance actions published on May 4, 1981 (46 FR 24950), and was provided to the Chief Counsel for Advocacy of the Small Business Administration.

X. Submission to Congress and the General Accounting Office

Under 5 U.S.C. 801(a)(1)(A), as added by the Small Business Regulatory Enforcement Fairness Act of 1996, the Agency has submitted a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the General Accounting Office prior to publication of this rule in today's **Federal Register**. This is not a ''major rule'' as defined by 5 U.S.C. 804(2).

List of Subjects in 40 CFR Parts 180 and 185

Environmental protection, Administrative practice and procedure, Agricultural commodities, Food additives, Pesticides and pests, Reporting and recordkeeping requirements.

Dated: September 12, 1997.

Daniel Barolo,

Director, Office of Pesticide Programs.

Therefore, 40 CFR chapter I is amended as follows:

PART 180—[AMENDED]

1. In part 180:

a. The authority citation for part 180 continues to read as follows:

Authority: 21 U.S.C. 346a and 371.

b. In § 180.293:

i. By designating the existing text as paragraph (a)(1) and adding a heading to paragraph (a).

ii. By adding paragraph (b).

iii. By adding and reserving paragraphs (c) and (d).

Section 180.293, as amended, reads as follows:

§ 180.293 Endothall; tolerances for residues.

(a) *General.* * * *

(b) *Section 18 emergency exemptions.* Time-limited tolerances are established for the residues of the herbicide endothall, in connection with use of the pesticide under section 18 emergency exemptions granted by EPA. The tolerances will expire on the dates specified in the following table:

Commodity	Parts per million	Expiration/ Revocation Date
Canola, seed ...	0.3	8/31/98

(c) *Tolerances with regional registrations.* [Reserved]

(d) *Indirect or inadvertent residues.* [Reserved]

PART 185—[AMENDED]

2. In part 185:

a. The authority citation for part 185 continues to read as follows:

Authority: 21 U.S.C. 346a and 348.

§ 185.2650 [Removed]

b. In § 185.2650:

i. By desginating the existing text as paragraph (a)(2) to § 180.293.

ii. By removing § 185.2650.

[FR Doc. 97–25236 Filed 9-23-97; 8:45 am]

BILLING CODE 6560–50–F

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 180, 185 and 186

[OPP–300556; FRL–5745–6]

RIN 2070–AB78

Fenarimol; Pesticide Tolerances for Emergency Exemptions

AGENCY: Environmental Protection Agency (EPA).

ACTION: Final rule.

SUMMARY: This regulation establishes a time-limited tolerance for residues of fenarimol in or on hops . This action is in response to EPA's granting of an emergency exemption under section 18 of the Federal Insecticide, Fungicide, and Rodenticide Act authorizing use of the pesticide on hops. This regulation establishes a maximum permissible level for residues of fenarimol in this food commodity pursuant to section 408(l)(6) of the Federal Food, Drug, and Cosmetic Act, as amended by the Food Quality Protection Act of 1996. The tolerance will expire and is revoked on December 31, 1998.

DATES: This regulation is effective September 24, 1997. Objections and requests for hearings must be received by EPA on or before November 24, 1997.

ADDRESSES: Written objections and hearing requests, identified by the docket control number, [OPP–300556], must be submitted to: Hearing Clerk (1900), Environmental Protection Agency, Rm. M3708, 401 M St., SW., Washington, DC 20460. Fees accompanying objections and hearing requests shall be labeled ''Tolerance Petition Fees'' and forwarded to: EPA Headquarters Accounting Operations Branch, OPP (Tolerance Fees), P.O. Box 360277M, Pittsburgh, PA 15251. A copy of any objections and hearing requests filed with the Hearing Clerk identified by the docket control number, [OPP–300556], must also be submitted to: Public Information and Records Integrity Branch, Information Resources and Services Division (7506C), Office of Pesticide Programs, Environmental Protection Agency, 401 M St., SW., Washington, DC 20460. In person, bring a copy of objections and hearing requests to Rm. 1132, CM #2, 1921 Jefferson Davis Hwy., Arlington, VA.

A copy of objections and hearing requests filed with the Hearing Clerk may also be submitted electronically by sending electronic mail (e-mail) to: opp-docket@epamail.epa.gov. Copies of objections and hearing requests must be submitted as an ASCII file avoiding the use of special characters and any form of encryption. Copies of objections and hearing requests will also be accepted on disks in WordPerfect 5.1 file format or ASCII file format. All copies of objections and hearing requests in electronic form must be identified by the docket control number [OPP–300556]. No Confidential Business Information (CBI) should be submitted through e-mail. Electronic copies of objections and hearing requests on this rule may be filed online at many Federal Depository Libraries.

FOR FURTHER INFORMATION CONTACT: By mail: Olga Odiott, Registration Division 7505C, Office of Pesticide Programs, Environmental Protection Agency, 401 M St., SW., Washington, DC 20460. Office location, telephone number, and e-mail address: Crystal Mall #2, 1921 Jefferson Davis Hwy., Arlington, VA, (703) 308-9363, e-mail: odiott.olga@epamail.epa.gov.

SUPPLEMENTARY INFORMATION: EPA, on its own initiative, pursuant to section 408(e) and (l)(6) of the Federal Food, Drug, and Cosmetic Act (FFDCA), 21 U.S.C. 346a(e) and (l)(6), is establishing a tolerance for residues of the fungicide fenarimol, in or on hops at 5 part per million (ppm). This tolerance will expire and is revoked on December 31, 1998. EPA will publish a document in the **Federal Register** to remove the revoked tolerance from the Code of Federal Regulations.

I. Background and Statutory Authority

The Food Quality Protection Act of 1996 (FQPA) (Pub. L. 104–170) was signed into law August 3, 1996. FQPA amends both the Federal Food, Drug, and Cosmetic Act (FFDCA), 21 U.S.C. 301 *et seq.*, and the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), 7 U.S.C. 136 *et seq* . The FQPA amendments went into effect immediately. Among other things, FQPA amends FFDCA to bring all EPA pesticide tolerance-setting activities under a new section 408 with a new safety standard and new procedures. These activities are described below and discussed in greater detail in the final rule establishing the time-limited tolerance associated with the emergency exemption for use of propiconazole on sorghum (61 FR 58135, November 13, 1996)(FRL–55729).

New section 408(b)(2)(A)(i) of the FFDCA allows EPA to establish a tolerance (the legal limit for a pesticide chemical residue in or on a food) only if EPA determines that the tolerance is ''safe.'' Section 408(b)(2)(A)(ii) defines ''safe'' to mean that ''there is a reasonable certainty that no harm will result from aggregate exposure to the

pesticide chemical residue, including all anticipated dietary exposures and all other exposures for which there is reliable information.'' This includes exposure through drinking water and in residential settings, but does not include occupational exposure. Section 408(b)(2)(C) requires EPA to give special consideration to exposure of infants and children to the pesticide chemical residue in establishing a tolerance and to ''ensure that there is a reasonable certainty that no harm will result to infants and children from aggregate exposure to the pesticide chemical residue. . . .''

Section 18 of FIFRA authorizes EPA to exempt any Federal or State agency from any provision of FIFRA, if EPA determines that ''emergency conditions exist which require such exemption.'' This provision was not amended by FQPA. EPA has established regulations governing such emergency exemptions in 40 CFR part 166.

Section 408(l)(6) of the FFDCA requires EPA to establish a time-limited tolerance or exemption from the requirement for a tolerance for pesticide chemical residues in food that will result from the use of a pesticide under an emergency exemption granted by EPA under section 18 of FIFRA. Such tolerances can be established without providing notice or period for public comment.

Because decisions on section 18-related tolerances must proceed before EPA reaches closure on several policy issues relating to interpretation and implementation of the FQPA, EPA does not intend for its actions on such tolerance to set binding precedents for the application of section 408 and the new safety standard to other tolerances and exemptions.

II. Emergency Exemption for Fenarimol on Hops and FFDCA Tolerances

The States of Washington, Oregon and Idaho availed themselves of the authority to declare a crisis exemption to use fenarimol for control of the Powdery mildew (*Sphaeroteca macularis*) in hops. Powdery mildew is a serious hop disease in many hop growing areas in the world. The elimination of commercial hop production in New York during the early part of this century is largely blamed on this disease. Since this disease has not been observed in the Pacific Northwest until very recently, no effective fungicides are registered to control it. Sulfur is the only pesticide available, but does not provide effective control. The pathogen is airborne and spreads very quickly, primarly during the months of July and August, which are critical to hop production. EPA has authorized under FIFRA section 18 the use of fenarimol on hops for control of powdery mildew in Washington, Oregon and Idaho. After having reviewed their submissions, EPA concurs that emergency conditions exist for these States .

As part of its assessment of this emergency exemption, EPA assessed the potential risks presented by residues of fenarimol in or on hops. In doing so, EPA considered the new safety standard in FFDCA section 408(b)(2), and EPA decided that the necessary tolerance under FFDCA section 408(l)(6) would be consistent with the new safety standard and with FIFRA section 18. Consistent with the need to move quickly on the emergency exemption in order to address an urgent non-routine situation and to ensure that the resulting food is safe and lawful, EPA is issuing this tolerance without notice and opportunity for public comment under section 408(e), as provided in section 408(l)(6). Although this tolerance will expire and is revoked on December 31, 1998, under FFDCA section 408(l)(5), residues of the pesticide not in excess of the amounts specified in the tolerance remaining in or on hops after that date will not be unlawful, provided the pesticide is applied in a manner that was lawful under FIFRA. EPA will take action to revoke this tolerance earlier if any experience with, scientific data on, or other relevant information on this pesticide indicate that the residues are not safe.

Because this tolerance is being approved under emergency conditions EPA has not made any decisions about whether fenarimol meets EPA's registration requirements for use on hops or whether a permanent tolerance for this use would be appropriate. Under these circumstances, EPA does not believe that this tolerance serves as a basis for registration of fenarimol by a State for special local needs under FIFRA section 24(c). Nor does this tolerance serve as the basis for any State other than Washington, Oregon and Idaho to use this pesticide on this crop under section 18 of FIFRA without following all provisions of section 18 as identified in 40 CFR part 166. For additional information regarding the emergency exemption for fenarimol, contact the Agency's Registration Division at the address provided above.

III. Risk Assessment and Statutory Findings

EPA performs a number of analyses to determine the risks from aggregate exposure to pesticide residues. First, EPA determines the toxicity of pesticides based primarily on toxicological studies using laboratory animals. These studies address many adverse health effects, including (but not limited to) reproductive effects, developmental toxicity, toxicity to the nervous system, and carcinogenicity. Second, EPA examines exposure to the pesticide through the diet (e.g., food and drinking water) and through exposures that occur as a result of pesticide use in residential settings.

A. Toxicity

1. *Threshold and non-threshold effects.* For many animal studies, a dose response relationship can be determined, which provides a dose that causes adverse effects (threshold effects) and doses causing no observed effects (the ''no-observed effect level'' or ''NOEL'').

Once a study has been evaluated and the observed effects have been determined to be threshold effects, EPA generally divides the NOEL from the study with the lowest NOEL by an uncertainty factor (usually 100 or more) to determine the Reference Dose (RfD). The RfD is a level at or below which daily aggregate exposure over a lifetime will not pose appreciable risks to human health. An uncertainty factor (sometimes called a ''safety factor'') of 100 is commonly used since it is assumed that people may be up to 10 times more sensitive to pesticides than the test animals, and that one person or subgroup of the population (such as infants and children) could be up to 10 times more sensitive to a pesticide than another. In addition, EPA assesses the potential risks to infants and children based on the weight of the evidence of the toxicology studies and determines whether an additional uncertainty factor is warranted. Thus, an aggregate daily exposure to a pesticide residue at or below the RfD (expressed as 100% or less of the RfD) is generally considered acceptable by EPA. EPA generally uses the RfD to evaluate the chronic risks posed by pesticide exposure. For shorter term risks, EPA calculates a margin of exposure (MOE) by dividing the estimated human exposure into the NOEL from the appropriate animal study. Commonly, EPA finds MOEs lower than 100 to be unacceptable. This 100-fold MOE is based on the same rationale as the 100-fold uncertainty factor.

Lifetime feeding studies in two species of laboratory animals are conducted to screen pesticides for cancer effects. When evidence of increased cancer is noted in these studies, the Agency conducts a weight of the evidence review of all relevant

toxicological data including short-term and mutagenicity studies and structure activity relationship. Once a pesticide has been classified as a potential human carcinogen, different types of risk assessments (e.g., linear low dose extrapolations or MOE calculation based on the appropriate NOEL) will be carried out based on the nature of the carcinogenic response and the Agency's knowledge of its mode of action.

2. *Differences in toxic effect due to exposure duration.* The toxicological effects of a pesticide can vary with different exposure durations. EPA considers the entire toxicity data base, and based on the effects seen for different durations and routes of exposure, determines which risk assessments should be done to assure that the public is adequately protected from any pesticide exposure scenario. Both short and long durations of exposure are always considered. Typically, risk assessments include ''acute'', ''short-term'', ''intermediate term'', and ''chronic'' risks. These assessments are defined by the Agency as follows.

Acute risk, by the Agency's definition, results from 1-day consumption of food and water, and reflects toxicity which could be expressed following a single oral exposure to the pesticide residues. High end exposure to food and water residues are typically assumed.

Short-term risk results from exposure to the pesticide for a period of 1-7 days, and therefore overlaps with the acute risk assessment. Historically, this risk assessment was intended to address primarily dermal and inhalation exposure which could result, for example, from residential pesticide applications. However, since enaction of FQPA, this assessment has been expanded to include both dietary and non-dietary sources of exposure, and will typically consider exposure from food, water, and residential uses when reliable data are available. In this assessment, risks from average food and water exposure, and high-end residential exposure, are aggregated. High-end exposures from all 3 sources are not typically added because of the very low probability of this occurring in most cases, and because the other conservative assumptions built into the assessment assure adequate protection of public health. However, for cases in which high-end exposure can reasonably be expected from multiple sources (e.g. frequent and widespread homeowner use in a specific geographical area), multiple high-end risks will be aggregated and presented as part of the comprehensive risk assessment/characterization. Since the toxicological endpoint considered in this assessment reflects exposure over a period of at least 7 days, an additional degree of conservatism is built into the assessment; i.e., the risk assessment nominally covers 1-7 days exposure, and the toxicological endpoint/NOEL is selected to be adequate for at least 7 days of exposure. (Toxicity results at lower levels when the dosing duration is increased.)

Intermediate-term risk results from exposure for 7 days to several months. This assessment is handled in a manner similar to the short-term risk assessment.

Chronic risk assessment describes risk which could result from several months to a lifetime of exposure. For this assessment, risks are aggregated considering average exposure from all sources for representative population subgroups including infants and children.

B. Aggregate Exposure

In examining aggregate exposure, FFDCA section 408 requires that EPA take into account available and reliable information concerning exposure from the pesticide residue in the food in question, residues in other foods for which there are tolerances, residues in groundwater or surface water that is consumed as drinking water, and other non-occupational exposures through pesticide use in gardens, lawns, or buildings (residential and other indoor uses). Dietary exposure to residues of a pesticide in a food commodity are estimated by multiplying the average daily consumption of the food forms of that commodity by the tolerance level or the anticipated pesticide residue level. The Theoretical Maximum Residue Contribution (TMRC) is an estimate of the level of residues consumed daily if each food item contained pesticide residues equal to the tolerance. In evaluating food exposures, EPA takes into account varying consumption patterns of major identifiable subgroups of consumers, including infants and children.The TMRC is a ''worst case'' estimate since it is based on the assumptions that food contains pesticide residues at the tolerance level and that 100% of the crop is treated by pesticides that have established tolerances. If the TMRC exceeds the RfD or poses a lifetime cancer risk that is greater than approximately one in a million, EPA attempts to derive a more accurate exposure estimate for the pesticide by evaluating additional types of information (anticipated residue data and/or percent of crop treated data) which show, generally, that pesticide residues in most foods when they are eaten are well below established tolerances.

Percent of crop treated estimates are derived from federal and private market survey data. Typically, a range of estimates are supplied and the upper end of this range is assumed for the exposure assessment. By using this upper end estimate of percent of crop treated, the Agency is reasonably certain that exposure is not understated for any significant subpopulation group. Further, regional consumption information is taken into account through EPA's computer-based model for evaluating the exposure of significant subpopulations including several regional groups, to pesticide residues. For this pesticide, the most highly exposed population subgroup (non-nursing infants < 1 year old) was not regionally based.

IV. Aggregate Risk Assessment and Determination of Safety

Consistent with section 408(b)(2)(D), EPA has reviewed the available scientific data and other relevant information in support of this action, EPA has sufficient data to assess the hazards of fenarimol and to make a determination on aggregate exposure, consistent with section 408(b)(2), for a time-limited tolerance for residues of fenarimol on hops at 5 ppm. EPA's assessment of the dietary exposures and risks associated with establishing the tolerance follows.

A. Toxicological Profile

EPA has evaluated the available toxicity data and considered its validity, completeness, and reliability as well as the relationship of the results of the studies to human risk. EPA has also considered available information concerning the variability of the sensitivities of major identifiable subgroups of consumers, including infants and children. The nature of the toxic effects caused by fenarimol are discussed below.

1. *Acute toxicity.* The Agency determined that the NOEL of 13 mg/kg/day, based on hydronephrosis at the lowest effect level (LEL) of 35 mg/kg/day, from a developmental study in rats should be used to assess acute dietary risks from residues of fenarimol. This risk assessment will evaluate risk to females 13+ years old, the population subgroup of concern.

2. *Short - and intermediate - term toxicity.* The Agency determined that the NOEL of 13 mg/kg/day from the rat developmental study should be used to assess risks from short- and intermediate-term exposures to residues

of fenarimol. At the LEL of 35 mg/kg/day, there was hydronephrosis.

3. *Chronic toxicity*. EPA has established the RfD for fenarimol at 0.065 milligrams/kilogram/day (mg/kg/day). This RfD is based on a 2 year rat feeding study with a NOEL of 6.5 mg/kg/day and an uncertainty factor of 100 based on fatty change in the liver at the LEL of 13 mg/kg/day.

4. *Carcinogenicity*. The Agency's Carcinigenicity Peer Review Committee (CPRC) has classified fenarimol as a Group E (non-carcinogenic in humans) chemical.

B. Exposures and Risks

1. *From food and feed uses.* Tolerances have been established (40 CFR 180.421) for the residues of fenarimol (alpha-(2 chlorophenyl)-alpha-(4-chlorophenyl)-5-pyrimidinemethanol), in or on a variety of raw agricultural commodities at levels ranging from 0.003 ppm in milk to 0.1 ppm in apples, pears and pecans. Tolerances have also been established (40 CFR 180.421(b)) for residues of fenarimol and its metabolites (alpha-(2-chlorophenyl)-alpha-(4-chlorophenyl)-1,4-dihydro-5-pyrimidinemethanol, and 5-[2-chlorophenyl)-(4-chlorophenyl)methyl]-3,4-dihydro-4-pyrimidinol measured as the total of fenarimol and 5-[(2- chlorophenyl)-(4-chlorophenyl)methyl]-3,4-dihydro-4-pyrimidine (calculated as fenarimol)) ranging from 1.0 ppm for cherries to 0.02 ppm for grapes. For this Section 18 only, the Agency determined that the residue of concern in hops is parent fenarimol. Risk assessments were conducted by EPA to assess dietary exposures and risks from fenarimol as follows:

i. *Acute exposure and risk.* Acute dietary risk assessments are performed for a food-use pesticide if a toxicological study has indicated the possibility of an effect of concern occurring as a result of a one day or single exposure. The acute dietary (food only) risk assessment used TMRC estimates. The resulting high-end exposure estimate of 0.01 mg/kg/day results in a dietary (food only) MOE of 1300 for females 13+ years. This MOE should be viewed as a conservative risk estimate. Refinement of the risk assessment using anticipated residue values and percent crop-treated data would result in a lower acute dietary risk estimate.

ii. *Chronic exposure and risk.* For the chronic dietary (food only) risk assessment, the Agency assumed that 100% of hops and all other commodities having fenarimol tolerances will contain fenarimol residues and those residues would be at the tolerance level. These assumptions result in an over estimate of human dietary exposure. Thus, in making a safety determination for this tolerance, HED is taking into account this conservative exposure assessment. The existing fenarimol tolerances (published and pending, and including the necessary Section 18 tolerance) result in a TMRC that is equivalent to percentages of the RfD that range from 1% for the U.S. population to 3% for non-nursing infants < 1 year old.

2. *From drinking water.* Based on available data used in EPA's assessment of environmental risk, fenarimol is not expected to leach to groundwater. Information on its persistence is inconclusive. There is no information on the persistence/mobility of fenarimol metabolites/degradates. There are no established Maximum Contaminant Levels for residues of fenarimol in drinking water and no Health Advisory Levels for this active ingredient in drinking water have been issued.

Chronic exposure and risk. Because the Agency lacks sufficient water-related exposure data to complete a comprehensive drinking water risk assessment for many pesticides, EPA has commenced and nearly completed a process to identify a reasonable yet conservative bounding figure for the potential contribution of water-related exposure to the aggregate risk posed by a pesticide. In developing the bounding figure, EPA estimated residue levels in water for a number of specific pesticides using various data sources. The Agency then applied the estimated residue levels, in conjunction with appropriate toxicological endpoints (RfD's or acute dietary NOEL's) and assumptions about body weight and consumption, to calculate, for each pesticide, the increment of aggregate risk contributed by consumption of contaminated water. While EPA has not yet pinpointed the appropriate bounding figure for exposure from contaminated water, the ranges the Agency is continuing to examine are all below the level that would cause fenarimol to exceed the RfD if the tolerance being considered in this document were granted. The Agency has therefore concluded that the potential exposures associated with fenarimol in water, even at the higher levels the Agency is considering as a conservative upper bound, would not prevent the Agency from determining that there is a reasonable certainty of no harm if the tolerance is granted.

3. *From non-dietary exposure.* Fenarimol is currently registered for use on the following residential non-food sites: ornamentals, turf and lawns. There are no indoor residential uses for fenarimol. Based on the nature of the outdoor residential uses, the EPA concludes that chronic residential exposure scenarios do not exist for fenarimol. Short and/or intermediate term exposure scenarios may exist. However, the Agency currently lacks sufficient residential-related exposure data to complete a comprehensive residential risk assessment for many pesticides, including fenarimol.

4. *Cumulative exposure to substances with common mechanism of toxicity.* Section 408(b)(2)(D)(v) requires that, when considering whether to establish, modify, or revoke a tolerance, the Agency consider ''available information'' concerning the cumulative effects of a particular pesticide's residues and ''other substances that have a common mechanism of toxicity.'' The Agency believes that ''available information'' in this context might include not only toxicity, chemistry, and exposure data, but also scientific policies and methodologies for understanding common mechanisms of toxicity and conducting cumulative risk assessments. For most pesticides, although the Agency has some information in its files that may turn out to be helpful in eventually determining whether a pesticide shares a common mechanism of toxicity with any other substances, EPA does not at this time have the methodologies to resolve the complex scientific issues concerning common mechanism of toxicity in a meaningful way. EPA has begun a pilot process to study this issue further through the examination of particular classes of pesticides. The Agency hopes that the results of this pilot process will increase the Agency's scientific understanding of this question such that EPA will be able to develop and apply scientific principles for better determining which chemicals have a common mechanism of toxicity and evaluating the cumulative effects of such chemicals. The Agency anticipates, however, that even as its understanding of the science of common mechanisms increases, decisions on specific classes of chemicals will be heavily dependent on chemical specific data, much of which may not be presently available.

Although at present the Agency does not know how to apply the information in its files concerning common mechanism issues to most risk assessments, there are pesticides as to which the common mechanism issues can be resolved. These pesticides include pesticides that are toxicologically dissimilar to existing chemical substances (in which case the Agency can conclude that it is unlikely that a pesticide shares a common mechanism of activity with other

substances) and pesticides that produce a common toxic metabolite (in which case common mechanism of activity will be assumed).

EPA does not have, at this time, available data to determine whether fenarimol has a common mechanism of toxicity with other substances or how to include this pesticide in a cumulative risk assessment. For the purposes of this tolerance action, therefore, EPA has not assumed that fenarimol has a common mechanism of toxicity with other substances.

C. Aggregate Risks and Determination of Safety for U.S. Population

1. *Acute risk.* For the population subgroup of concern, females 13+ years, the Agency estimated an MOE value of 1300 for the acute aggregate dietary (food only) risk from exposures to fenarimol residues. Despite the potential for exposure to fenarimol in drinking water and from non-dietary, non-occupational exposure, EPA does not expect the aggregate exposure to exceed the Agency's level of concern.

2. *Chronic risk.* Using the TMRC exposure assumptions described above, EPA has concluded that aggregate exposure to fenarimol from food will utilize 1% of the RfD for the U.S. population. The major identifiable subgroup with the highest aggregate exposure is non-nursing infants < 1 year old. EPA generally has no concern for exposures below 100% of the RfD because the RfD represents the level at or below which daily aggregate dietary exposure over a lifetime will not pose appreciable risks to human health. Despite the potential for exposure to fenarimol in drinking water, EPA does not expect the aggregate exposure to exceed 100% of the RfD. EPA concludes that there is a reasonable certainty that no harm will result from aggregate exposure to fenarimol residues.

3. *Short- and intermediate-term risk.* Short- and intermediate-term aggregate exposure takes into account chronic dietary food and water (considered to be a background exposure level) plus indoor and outdoor residential exposure.

Based on the registered uses of fenarimol short and/or intermediate term exposure scenarios may exist. However, the Agency currently lacks sufficient residential-related exposure data to complete a comprehensive residential risk assessment for many pesticides, including fenarimol.

D. Aggregate Risks and Determination of Safety for Infants and Children

1. *Safety factor for infants and children*— i. *In general.* In assessing the potential for additional sensitivity of infants and children to residues of fenarimol, EPA considered data from developmental toxicity studies in the rat and rabbit and a 3-generation reproduction study in the rat and reproduction studies in mice and guinea pigs. The developmental toxicity studies are designed to evaluate adverse effects on the developing organism resulting from maternal pesticide exposure during gestation. Reproduction studies provide information relating to effects from exposure to the pesticide on the reproductive capability of mating animals and data on systemic toxicity.

FFDCA section 408 provides that EPA shall apply an additional tenfold margin of safety for infants and children in the case of threshold effects to account for pre-and post-natal toxicity and the completeness of the database unless EPA determines that a different margin of safety will be safe for infants and children. Margins of safety are incorporated into EPA risk assessments either directly through use of a MOE analysis or through using uncertainty (safety) factors in calculating a dose level that poses no appreciable risk to humans. EPA believes that reliable data support using the standard 100-fold safety factor and not the additional tenfold safety factor when EPA has a complete data base under existing guidelines and when the severity of the effect in infants or children or the potency or unusual toxic properties of a compound do not raise concerns regarding the adequacy of the standard safety factor.

ii. *Developmental toxicity studies—Rats*: The maternal (systemic) NOEL was 13 mg/kg/day, based on decreased weight gain at the lowest observed effect level (LOEL) of 35 mg/kg/day. The developmental (fetal) NOEL was 13 mg/kg/day based on hydronephrosis at the LOEL of 35 mg/kg/day.

Rabbits: The maternal (systemic) NOEL was 35 mg/kg/day, the highest dose tested (HDT). The developmental (fetal) NOEL was 35 mg/kg/day (HDT).

iii. *Reproductive toxicity study—Rats*: In a 3-generation rat reproduction study, the maternal (systemic) NOEL was 5.0 mg/kg/day, based on increased gestation time, and delayed onset of parturition at the LOEL of 17.5 mg/kg/day. The developmental (pup) NOEL was 5.0 mg/kg/day, based on decreased pup survival and hydronephrosis at the LOEL of 17.5 mg/kg/day. The reproductive NOEL was 2.5 mg/kg/day, based on anti-fertility effects in males, and dystocia in females at the LEL of 5.0 mg/kg/day.

iv. *Pre- and post-natal sensitivity.* Based on the developmental toxicity studies discussed above, for fenarimol there does not appear to be a special sensitivity for pre-natal effects. However, based on the developmental finding of hydronephrosis in the rat study, an acute dietary risk assessment was performed for females 13+ years of age.

Based on the reproductive toxicity studies discussed above and other reviewed data for fenarimol, there does not appear to be a special sensitivity for post-natal effects. The major reproductive findings in the rat (post-natal male infertility and dystocia and related effects in females) were concluded to be species-specific findings by the Agency. Reproduction studies in mice, rabbits, and guinea pigs did not demonstrate the reproductive concerns. Mechanistic data also substantiate the species-specific conclusion.

v. *Conclusion.* The EPA concludes that reliable data support use of the standard 100-fold margin of exposure/uncertainty factor and that an additional margin/factor is not needed to protect infants and children.

2. *Acute risk.* The acute dietary MOE (food only) was calculated to be 1300 for females 13+ years (accounts for both maternal and fetal exposure). These MOE calculations were based on the developmental NOEL in rats of 13 mg/kg/day. This risk assessment assumed 100% crop-treatment with tolerance level residues on all treated crops consumed, resulting in an over-estimate of dietary exposure. The large acute dietary MOE calculated for females 13+ years provides assurance that there is a reasonable certainty of no harm for females 13+ years. Despite the potential for exposure to fenarimol in drinking water, the Agency does not expect the aggregate exposure (food plus water) to exceed the Agency's level of concern for acute dietary exposure.

3. *Chronic risk.* Using the conservative exposure assumptions described above, EPA has concluded that aggregate exposure to fenarimol from food will utilize a percentage of the RfD that ranges from 1% for children (1-6 yrs.), up to 3% for non-nursing infants <1 year old. EPA generally has no concern for exposures below 100% of the RfD because the RfD represents the level at or below which daily aggregate dietary exposure over a lifetime will not pose appreciable risks to human health. Despite the potential for exposure to fenarimol in drinking water, EPA does not expect the aggregate exposure to exceed 100% of the RfD. EPA concludes that there is a reasonable certainty that no harm will result to infants and children from

chronic aggregate exposure to fenarimol residues.

4. *Short- or intermediate-term risk.* Based on the registered uses of fenarimol short and/or intermediate term exposure scenarios may exist. However, the Agency currently lacks sufficient residential-related exposure data to complete a comprehensive residential risk assessment for many pesticides, including fenarimol.

V. Other Considerations

A. Metabolism In Plants and Animals

The nature of the residue of fenarimol in hops has not been directly determined. Metabolism studies with fenarimol in apples and cherries indicate that the parent compound is the only significant residue. For the purpose of this tolerance, EPA will translate these data to hops. For this tolerance only, EPA concludes that the residue of concern in hops is parent fenarimol. According to Table 1 (OPPTS 860.1000), there are no livestock feedstuffs derived from hops. Thus, the livestock metabolism and magnitude of residues in meat, milk, poultry and eggs are not a concern for this Section 18 .

B. Analytical Enforcement Methodology

Analytical methodology exists for the enforcement of currently established tolerances for fenarimol. The method (GC/ECD) is published in PAM vol II (Method R039). For the purposes of this tolerance, Method R039 may be used to enforce the required tolerance for fenarimol in hops.

C. Magnitude of Residues

Residues of fenarimol are not expected to exceed 5 ppm in/on dried hop cones as a result of this Section 18 use.

D. International Residue Limits

There are no Mexican or Canadian Maximum Residue Limits (MRL) for fenarimol in/on hops. Thus, harmonization with Mexico and Canada is not an issue for this Section 18. A CODEX MRL of 5 ppm is established for fenarimol *per se* in/on hops. As EPA has concluded that a tolerance level of 5 ppm should be established for residues of fenarimol in/on hops as a result of this Section 18 exemption, harmonization with CODEX is not an issue.

VI. Conclusion

Therefore, the tolerance is established for residues of fenarimol in hops at 5 ppm.

VII. Objections and Hearing Requests

The new FFDCA section 408(g) provides essentially the same process for persons to ''object'' to a tolerance regulation issued by EPA under new section 408(e) and (l)(6) as was provided in the old section 408 and in section 409. However, the period for filing objections is 60 days, rather than 30 days. EPA currently has procedural regulations which govern the submission of objections and hearing requests. These regulations will require some modification to reflect the new law. However, until those modifications can be made, EPA will continue to use those procedural regulations with appropriate adjustments to reflect the new law.

Any person may, by November 24, 1997, file written objections to any aspect of this regulation and may also request a hearing on those objections. Objections and hearing requests must be filed with the Hearing Clerk, at the address given above (40 CFR 178.20). A copy of the objections and/or hearing requests filed with the Hearing Clerk should be submitted to the OPP docket for this rulemaking. The objections submitted must specify the provisions of the regulation deemed objectionable and the grounds for the objections (40 CFR 178.25). Each objection must be accompanied by the fee prescribed by 40 CFR 180.33(i). If a hearing is requested, the objections must include a statement of the factual issues on which a hearing is requested, the requestor's contentions on such issues, and a summary of any evidence relied upon by the requestor (40 CFR 178.27). A request for a hearing will be granted if the Administrator determines that the material submitted shows the following: There is genuine and substantial issue of fact; there is a reasonable possibility that available evidence identified by the requestor would, if established, resolve one or more of such issues in favor of the requestor, taking into account uncontested claims or facts to the contrary; and resolution of the factual issues in the manner sought by the requestor would be adequate to justify the action requested (40 CFR 178.32). Information submitted in connection with an objection or hearing request may be claimed confidential by marking any part or all of that information as Confidential Business Information (CBI). Information so marked will not be disclosed except in accordance with procedures set forth in 40 CFR part 2. A copy of the information that does not contain CBI must be submitted for inclusion in the public record. Information not marked confidential may be disclosed publicly by EPA without prior notice.

VIII. Public Docket

EPA has established a record for this rulemaking under docket control number [OPP–300556] (including any comments and data submitted electronically). A public version of this record, including printed, paper versions of electronic comments, which does not include any information claimed as CBI, is available for inspection from 8:30 a.m. to 4 p.m., Monday through Friday, excluding legal holidays. The public record is located in Room 1132 of the Public Information and Records Integrity Branch, Information Resources and Services Division (7506C), Office of Pesticide Programs, Environmental Protection Agency, Crystal Mall #2, 1921 Jefferson Davis Hwy., Arlington, VA.

Electronic comments may be sent directly to EPA at:

opp-docket@epamail.epa.gov.

Electronic comments must be submitted as an ASCII file avoiding the use of special characters and any form of encryption.

The official record for this rulemaking, as well as the public version, as described above will be kept in paper form. Accordingly, EPA will transfer any copies of objections and hearing requests received electronically into printed, paper form as they are received and will place the paper copies in the official rulemaking record which will also include all comments submitted directly in writing. The official rulemaking record is the paper record maintained at the Virginia address in ''ADDRESSES'' at the beginning of this document.

IX. Regulatory Assessment Requirements

This final rule establishes a time-limited tolerance under FFDCA section 408 (l)(6). The Office of Management and Budget (OMB) has exempted these types of actions from review under Executive Order 12866, entitled Regulatory Planning and Review (58 FR 51735, October 4, 1993). This final rule does not contain any information collections subject to OMB approval under the Paperwork Reduction Act (PRA), 44 U.S.C. 3501 *et seq.*, or impose any enforceable duty or contain any unfunded mandate as described under Title II of the Unfunded Mandates Reform Act of 1995 (UMRA) (Pub. L. 104–4). Nor does it require any prior consultation as specified by Executive Order 12875, entitled Enhancing the Intergovernmental Partnership (58 FR

58093, October 28, 1993), or special considerations as required by Executive Order 12898, entitled Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations (59 FR 7629, February 16, 1994), or require OMB review in accordance with Executive Order 13045, entitled Protection of Children from Environmental Health Risks and Safety Risks (62 FR 19885, April 23, 1997).

In addition, since these tolerances and exemptions that are established under FFDCA section 408 (l)(6), such as the tolerance in this final rule, do not require the issuance of a proposed rule, the requirements of the Regulatory Flexibility Act (RFA) (5 U.S.C. 601 *et seq.*) do not apply. Nevertheless, the Agency has previously assessed whether establishing tolerances, exemptions from tolerances, raising tolerance levels or expanding exemptions might adversely impact small entities and concluded, as a generic matter, that there is no adverse economic impact. The factual basis for the Agency's generic certification for tolerance acations published on May 4, 1981 (46 FR 24950), and was provided to the Chief Counsel for Advocacy of the Small Business Administration.

X. Submission to Congress and the General Accounting Office

Under 5 U.S.C. 801(a)(1)(A), as added by the Small Business Regulatory Enforcement Fairness Act of 1996, the Agency has submitted a report containing this rule and other required information to the U.S. Senate, the U.S. House of Representatives, and the Comptroller General of the General Accounting Office prior to publication of this rule in today's **Federal Register**. This is not a ''major rule'' as defined by 5 U.S.C. 804(2).

List of Subjects

40 CFR Part 180

Environmental protection, Administrative practice and procedure, Agricultural commodities, Pesticides and pests, Reporting and recordkeeping requirements.

40 CFR Part 185

Environmental protection, Food additives, Pesticides and pests.

40 CFR Part 186

Environmental protection, Animal feeds, Pesticides and pests.

Dated: September 16, 1997.

James Jones,

Acting Director, Registration Division, Office of Pesticide Programs.

Therefore, 40 CFR chapter I is amended as follows:

PART 180—[AMENDED]

1. In part 180:

a. The authority citation for part 180 continues to read as follows:

Authority: 21 U.S.C. 346a and 371.

b. Section 180.421 is amended as follows:

i. By adding a heading to paragraph (a) and designating the existing text as paragraph (a)(1).

ii. By redesignating paragraph (b) as paragraph (a)(2) and by adding a new paragraph (b).

iii. By adding and reserving paragraphs (c) and (d).

Section 180.421, as amended, reads as follows:

§ 180.421 Fenarimol; tolerances for residues.

(a) *General.* * * *

(b) *Section 18 emergency exemptions.* A time-limited tolerance is established for residues of the fungicide fenarimol in connection with use of the pesticide under section 18 emergency exemptions granted by EPA. The tolerance will expire and be revoked on the date specified in the following table:

Commodity	Parts per million	Expiration/Revocation Date
Hops	5	December 31, 1998

(c) *Tolerances with regional registrations.* [Reserved]

(d) *Indirect or inadvertent residues.* [Reserved]

PART 185—[AMENDED]

2. In part 185:

a. The authority citation for part 185 continues to read as follows:

Authority: 21 U.S.C. 346a and 348.

§ 185.3200 [Removed]

b. In § 185.3200:

i. The entries in the table are transferred and alphabetically added to the table in paragraph (a)(2) of § 180.421.

ii. The remainder of § 185.3200 is removed.

PART 186—[AMENDED]

3. In part 186:

a. The authority citation for part 186 continues to read as follows:

Authority: 21 U.S.C. 342, 348, and 701.

§ 186.3200 [Removed]

b. In § 186.3200:

i. The entry in the table of paragraph (a) is transferred and alphabetically added to the table in paragraph (a)(1) of § 180.421.

ii. The entries in the table of paragraph (b) are transferred and alphabetically added to the table in paragraph (a)(2) of § 180.421.

iii. The remainder of § 186.3200 is removed.

[FR Doc. 97–25235 Filed 9-23-97; 8:45 am]

BILLING CODE 6560–50–F

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Health Care Financing Administration

42 CFR Part 473

[BPD–453–CN]

Rin 0938–AG18

Medicare Program; Medicare Appeals of Individual Claims; Correction

AGENCY: Health Care Financing Administration (HCFA), HHS.

ACTION: Correction to final regulation.

SUMMARY: In the May 12, 1997 issue of the **Federal Register**, we published a regulation titled, ''Medicare Appeals of Individual Claims, BPD–453–FC.'' That final rule concerned individual claims appeals under part A and part B. We made an error in that regulation and this document corrects that error.

EFFECTIVE DATES: This correction is effective June 11, 1997.

FOR FURTHER INFORMATION CONTACT: Morton Marcus, (410) 786–4477.

SUPPLEMENTARY INFORMATION:

Background

On May 12, 1997 (62 FR 25844) we published a final rule with comment period that expanded our regulations to recognize the right of Medicare Part B appellants to a hearing before an administrative law judge (ALJ) for claims if at least $500 remains in dispute and the right to judicial review of an adverse ALJ decision if at least $1,000 remains in controversy. That rule also codified limitations on the review by ALJs and the courts of certain national coverage determinations and the statutory authority for an expedite appeals process under part A and part B. Finally, we made a number of technical conforming amendments.

Need for Correction

On page 25855, in the second and third columns we provided a number of technical amendments. Amendment number 8, beginning at the bottom of column 2, was intended to correct wording in § 473.38 which concerns Peer Review Organization reconsidered decisions. Amendment 8(b) incorrectly calls for deletions of a phrase from paragraph (a) of § 473.38, whereas the phrase actually occurs in the undesignated introductory material of that section. Accordingly, we are making the following correction to document 97–12263 appearing in the **Federal Register** of May 12, 1997.

§ 473.38 [Corrected]

On page 25855 the first two lines of column 3 are corrected to read as follows:

''(b) In the undesignated introductory material, the words 'final and' are removed.''

* * * * *

(Catalog of Federal Domestic Assistance Program No. 93.778, Medical Assistance Program; No. 93.773 Medicare—Hospital Insurance Program; and No. 93.774, Medicare—Supplementary Medical Insurance Program)

Dated: September 18, 1997.

Neil J. Stillman,

Deputy Assistant Secretary for Information Resource Management.

[FR Doc. 97–25344 Filed 9–23–97; 8:45 am]

BILLING CODE 4120–01–M

NATIONAL SCIENCE FOUNDATION

45 CFR Part 650

Minor Amendments To Rule on Inventions and Patents Resulting From Grants, Cooperative Agreements, and Contracts

AGENCY: National Science Foundation.

ACTION: Final rule with request for comments.

SUMMARY: This action amends the NSF Patents regulation to permit grantee to use an electronic reporting and management system for inventions made with NSF assistance.

DATES: This revision is effective September 24, 1997. Comments, however, are welcome and will be considered in making future revisions.

ADDRESSES: All comments should be addressed to: NSF Patent Assistant, Office of the General Counsel, National Science Foundation 4201 Wilson Boulevard, Arlington, VA 22230.

FOR FURTHER INFORMATION CONTACT: Teresa L. Hamm-Wooten, NSF Patent Assistant, on (703) 306–1060 (voice), (703) 306–0149 (facsimile), or *patents@nsf.gov*.

SUPPLEMENTARY INFORMATION: This amendment revises the current NSF patent regulation published as part 650 of title 45 of the Code of Federal Regulations to permit NSF grantees to use the Edison Invention Information Management System maintained by the National Institutes of Health to handle NSF-assisted inventions. The only change for grantees who do not choose to use Edison is that they will be required to submit to the NSF Patent Assistant a copy of the page of the United States patent application that contains the Federal support clause required by paragraph (f)(4) of the standard Patent Rights clause in section 650.4(a) along with a confirmation of the Government license instead of being required to provide a copy of the entire patent when it issues. That change is being made (1) to conform the Foundation's reporting requirement to those of the National Institutes of Health and (2) because the availability of searchable on-line patent databases has eliminated the need for the Foundation to have paper copies of patents issued on NSF subject inventions.

Determinations

I have determined, under the criteria set forth in Executive Order 12866, that this rule is not a significant regulatory action requiring review by the Office of Information and Regulatory Affairs. I also certify, pursuant to the requirements of the Regulatory Flexibility Act, 5 U.S.C. Secs. 601–612, that none of the changes made by this rule will have a significant economic impact on any small entities. Finally, I have reviewed this rule in light of section 2 of Executive Order 12778 and certify for the National Science Foundation that this rule meets the applicable standards provided in sections 2(a) and 2(b) of that order.

List of Subjects in 45 CFR Part 650

Government procurement, Grant programs—science and technology, Inventions and patents, Nonprofit organizations, Small businesses.

Lawrence Rudolph,

General Counsel.

Accordingly, Title 45 of the Code of Federal Regulations part 650 is amended as follows:

PART 650—PATENTS

1. The authority citation for Part 650 continues to read as follows:

Authority: 35 U.S.C. 200–212; 42 U.S.C. 1870(e) and 1871; and the Presidential Memorandum entitled ''Government Patent Policy'', issued February 18, 1983.

§ 650.4 [Amended]

2. The Patent Rights clause set forth in § 650.4(a) is amended:

A. By replacing ''APRIL, 1992'' in its heading with ''SEPTEMBER, 1997'';

B. By adding between the words ''Government'' and ''within'' the phrase ''and the page of a United States patent application that contains the Federal support clause'' in paragraph (f)(5); and

C. By removing paragraph (f)(6).

3. The following new § 650.19 is added:

§ 650.19 Electronic invention handling.

(a) Grantees are encouraged to use the Edison Invention Information Management System maintained by the National Institutes of Health to disclose NSF subject inventions. Detailed instructions for use of that system are provided at http://era.info.nih.gov/Edison/ and should be followed for NSF subject inventions except that:

(1) All written communications required should be addressed to the Patent Assistant, Office of the General Counsel, National Science Foundation, 4201 Wilson Boulevard, Arlington, VA 22230.

(2) NSF does not require either an Annual Utilization Report or a Final Invention Statement and Certification.

(b) Questions on use of Edison may be sent to the NSF Patent Assistant at patents@nsf.gov.

[FR Doc. 97–25120 Filed 9–23–97; 8:45 am]
BILLING CODE 7555–01–P

DEPARTMENT OF TRANSPORTATION

Federal Highway Administration

49 CFR Chapter III, Parts 365, 366, 372, 375, 387, and 390

RIN 2125–AE23

Motor Carrier Transportation; Technical Amendments

AGENCY: Federal Highway Administration (FHWA), DOT.

ACTION: Final rule; technical amendments.

SUMMARY: This document makes technical amendments to FHWA's regulations regarding motor carrier transportation. The technical amendments are necessary to correct references within several parts and one of the appendices to subchapter B. These technical amendments will provide accurate references within the parts that were published on October 21, 1996, at 61 FR 54706, which transferred and redesignated certain motor carrier transportation regulations from 49 CFR Chapter X to the FHWA in 49 CFR Chapter III.

EFFECTIVE DATE: September 24, 1997.

FOR FURTHER INFORMATION CONTACT: Mr. Michael J. Falk, Office of the Chief Counsel, Motor Carrier Law Division, (202)366–1384, Federal Highway Administration, Department of Transportation, 400 Seventh Street, SW., Washington, DC 20590. Office hours are from 7:45 a.m. to 4:15 p.m., e.t., Monday through Friday, except Federal holidays.

SUPPLEMENTARY INFORMATION: On October 21, 1996, at 61 FR 54706, the FHWA and the Surface Transportation Board (STB) transferred and redesignated certain motor carrier transportation regulations from 49 CFR Chapter X to the FHWA in 49 CFR Chapter III. No substantive changes were made to the regulations. On April 1, 1997, at 62 FR 15417, the FHWA made technical amendments to former Interstate Commerce Commission (ICC) regulations which were transferred to the FHWA in accordance with section 204 of the ICC Termination Act of 1995 (ICCTA), Pub. L. 104–88, 109 Stat. 803. Additionally, final amendments to part 372 were published on July 16, 1997, at 62 FR 38035, which removed the notice filing requirements for agricultural cooperative associations which conduct compensated transportation operations for nonmembers.

This document merely makes technical amendments to 49 CFR parts 365, 366, 372, 375, 387, 390, and appendix F to subchapter B in order to update outdated statutory references and internal redesignated regulation citations. Since all of these rules are in the review process, other necessary nomenclature and technical changes will be published at a later date. There are no substantive amendments being made at this time.

Rulemaking Analyses and Notices

This document makes only minor, non-substantive technical corrections to existing regulations. The rule replaces outdated statutory references and internal regulatory citations with the correct references. Therefore, the FHWA finds good cause to adopt the rule without prior notice or opportunity for public comment (5 U.S.C. 553(b)). The DOT's regulatory policies and procedures also authorize promulgation of the rule without prior notice because it is anticipated that such action would not result in the receipt of useful information. The FHWA is making the rule effective upon publication in the **Federal Register** because it imposes no new burdens and merely corrects existing internal references to regulations (5 U.S.C. 553(d)).

Executive Order 12866 (Regulatory Planning and Review) and DOT Regulatory Policies and Procedures

The FHWA has determined that this action is not a significant regulatory action within the meaning of Executive Order 12866 or significant within the meaning of Department of Transportation regulatory policies and procedures. Since this rulemaking action makes only technical corrections to the current regulations it is anticipated that the economic impact of this rulemaking will be minimal; therefore, a full regulatory evaluation is not required.

Regulatory Flexibility Act

In compliance with the Regulatory Flexibility Act, 5 U.S.C. 601–612, the FHWA has evaluated the effects of this rule on small entities. Based on the evaluation, and since this rulemaking action makes only technical corrections to the current regulations, the FHWA hereby certifies that this action will not have a significant impact on a substantial number of small entities.

Executive Order 12612 (Federalism Assessment)

This action has been analyzed in accordance with the principles and criteria contained in Executive Order 12612, and it has been determined that this action does not have sufficient federalism implications to warrant the preparation of a federalism assessment.

Executive Order 12372 (Intergovernmental Review)

Catalog of Federal Domestic Assistance Program Number 20.217, Motor Carrier Safety. The regulations implementing Executive Order 12372 regarding intergovernmental consultation on Federal programs and activities do not apply to this program.

Paperwork Reduction Act

This action does not contain a collection of information requirement for purposes of the Paperwork Reduction Act of 1995, 44 U.S.C. 3501 *et seq.*

National Environmental Policy Act

The agency has analyzed this action for the purpose of the National Environmental Policy Act of 1969 (42 U.S.C. 4321 *et seq.*) and has determined that this action would not have any effect on the quality of the environment.

Regulation Identification Number

A regulation identification number (RIN) is assigned to each regulatory action listed in the Unified Agenda of Federal Regulations. The Regulatory Information Service Center publishes the Unified Agenda in April and October of each year. The RIN contained in the heading of this document can be used to cross reference this action with the Unified Agenda.

List of Subjects

49 CFR Part 365

Administrative practice and procedure, Brokers, Buses, Freight forwarders, Highways and roads, Motor carriers.

49 CFR Part 366

Administrative practice and procedure, Brokers, Freight forwarders, Highways and roads, Motor carriers.

49 CFR Part 372

Agricultural commodities, Buses, Commercial zones, Freight forwarders, Highways and roads, Motor carriers of property, Reporting and recordkeeping requirements.

49 CFR Part 375

Advertising, Arbitration, Consumer protection, Freight, Insurance, Motor

carriers, Moving of household goods, Reporting and recordkeeping requirements.

49 CFR Part 387

Hazardous materials transportation, Highways and roads, Insurance, motor carriers, Penalties, Reporting and recordkeeping requirements, Surety bonds.

49 CFR Part 390

Highway safety, Highway and roads, Motor carriers, Motor vehicle identification and marking, Reporting and recordkeeping requirements.

Issued on: September 17, 1997.

S. Reid Alsop,

Special Assistant to the Chief Counsel.

In consideration of the foregoing and under the authority of 49 U.S.C. 104 and 322, the FHWA amends title 49, Code of Federal Regulations, Chapter III, as set forth below:

PART 365—RULES GOVERNING APPLICATIONS FOR OPERATING AUTHORITY

1. The authority citation for part 365 continues to read as follows:

Authority: 5 U.S.C. 553 and 559; 16 U.S.C. 1456; 49 U.S.C. 13101, 13301, 13901–13906, 14708, 31138, and 31144; 49 CFR 1.48.

2. In part 365, in the list below, for each section indicated in the left column, remove the word or words indicated in the middle column wherever they appear in the section, and add the words indicated in the right column:

Section	Remove	Add
365.101(e)	49 U.S.C. 10922(c)(2)(A)	49 U.S.C. 13902(b)(3).
365.101(f)	49 U.S.C. 10922(c)(2)(B)	49 U.S.C. 13902(b)(3).
365.107(c)	49 U.S.C. 10922(c)(2)(A)	49 U.S.C. 13902(b)(3).
365.107(e)(2)	49 U.S.C. 10101	49 U.S.C. 13101.
365.205(d)	§ 1160.4	§ 365.107.
365.405(a)(2)	1043	387, subpart C.
365.405(a)(2)	1044	366.
365.405(b)(1)(vii)	49 U.S.C. 10927	49 U.S.C. 13906.
365.405(b)(1)(viii)	§ 1181.4	§ 365.409.
365.405(b)(2)(ii)	49 U.S.C. 11343	49 U.S.C. 14303.
365.409(a)	49 U.S.C. 11343	49 U.S.C. 14303.
365.409(c)	§ 1181.2	§ 365.405.
365.413(a) intro	1181	365, subpart D.

PART 366—DESIGNATION OF PROCESS AGENT

3. The authority citation for part 366 is revised to read as follows:

Authority: 49 U.S.C. 13303, 13304, and 14704; 49 CFR 1.48.

4. In part 366, in the list below, for each section indicated in the left column, remove the word or words indicated in the middle column wherever they appear in the section, and add the words indicated in the right column:

Section	Remove	Add
366.1	49 CFR 1043.10(a)	49 CFR 387.319(a).
366.3	49 U.S.C. 10102(18)	49 U.S.C. 13102(16).
366.6	§ 1044.4	§ 366.4.

PART 372—EXEMPTIONS, COMMERCIAL ZONES, AND TERMINAL AREAS

5. The authority citation for part 372 continues to read as follows:

Authority: 49 U.S.C. 13504 and 13506; 49 CFR 1.48.

6. In part 372, in the list below, for each section indicated in the left column, remove the word or words indicated in the middle column wherever they appear in the section, and add the words indicated in the right column:

Section	Remove	Add
372.109 intro	§ 1047.22	§ 372.111.
372.111(b)(8)	49 U.S.C. 10526(a)(5)	49 U.S.C. 13506(a)(5).
372.111(b)(9)(iii)	§ 1047.21(a)	§ 372.109(a).
372, subpt C, note	[Remove note in its entirety]	None.

PART 375—TRANSPORTATION OF HOUSEHOLD GOODS IN INTERSTATE OR FOREIGN COMMERCE

7. The authority citation for part 375 is revised to read as follows:

Authority: 5 U.S.C. 553; 49 U.S.C. 13301 and 14104; 49 CFR 1.48.

8. In part 375, in the list below, for each section indicated in the left column, remove the word or words indicated in the middle column wherever they appear in the section, and add the words indicated in the right column:

Section	Remove	Add
375.2(a) intro	§ 1056.1(b)(1)	§ 375.1(b)(1).

Section	Remove	Add
375.2(a)(2)	49 U.S.C. 11711	49 U.S.C. 14708.
375.2(a)(3)	§ 1056.18	§ 375.18.
375.2(b)(2)	49 CFR part 1056	49 CFR part 375.
375.3(a)	§ 1056.1(b)(1)	§ 375.1(b)(1).
375.3(b)	§ 1056.1(b)(1)	§ 375.1(b)(1).
375.4(a)	§ 1056.1(b)(1)	§ 375.1(b)(1).
375.5(a) intro	§ 1056.1(b)(1)	§ 375.1(b)(1).
375.6(a)	§ 1056.1(b)(1)	§ 375.1(b)(1).
375.6(a)	§ 1056.6(b)	§ 375.6(b).
375.6(b)(4)	§ 1056.9(b)	§ 375.9(b).
375.7(a) intro	§ 1056.1(b)(4)	§ 375.1(b)(4).
375.8(a)(1)	§ 1056.1(b)(1)	§ 375.1(b)(1).
375.8(a)(1)	§ 1056.1(b)(2)	§ 375.1(b)(2).
375.8(a)(3)	§ 1056.5(b)	§ 375.5(b).
375.11(a)	§ 1056.1(b)(1)	§ 375.1(b)(1).
375.12(a)	§ 1056.11(a)	§ 375.11(a).
375.12(a)	§ 1056.1(b)(1)	§ 375.1(b)(1).
375.13(a)	§ 1056.1(a)	§ 375.1(a).
375.15(a)	§ 1056.1(b)(1)	§ 375.1(b)(1).
375.15(b)	part 1005	part 370.
375.15(b)	§ 1056.1(b)(1)	§ 375.1(b)(1).
375.16(a) intro	§ 1056.1(b)(1)	§ 375.1(b)(1).
375.16(b)	§ 1056.15	§ 375.15.
375.17(a)	§ 1056.1(b)(3)	§ 375.1(b)(3).
375.17(c)	§ 1056.1(b)(1)	§ 375.1(b)(1).
375.17(c)	§ 1056.1(b)(3)	§ 375.1(b)(3).
375.18(a)	§ 1056.1(b)	§ 375.1(b).
375.19	49 CFR 1056(b)(1)	49 CFR 375.1(b)(1).

PART 387—MINIMUM LEVELS OF FINANCIAL RESPONSIBILITY FOR MOTOR CARRIERS

9. The authority citation for part 387 continues to read as follows:

Authority: 49 U.S.C. 13101, 13301, 13906, 14701, 31138, and 31139; and 49 CFR 1.48.

10. In part 387, in the list below, for each section indicated in the left column, remove the word or words indicated in the middle column wherever they appear in the section, and add the words indicated in the right column:

Section	Remove	Add
387.301(a)(1)	§ 1043.2	§ 387.303.
387.301(a)(1)	§ 1043.2(b)(2)	§ 387.303(b)(2).
387.301(a)(2)	§ 1043.2(b)(2) [in 2 places]	§ 387.303(b)(2) [in 2 places].
387.301(b)	§ 1043.2	§ 387.303.
387.303(b)(1)	§ 1043.1(a)(1)	§ 387.301(a)(1).
387.303(b)(1)(l)	§ 1043.2(b)(2)(d)	§ 387.303(b)(2).
387.303(b)(2)	§ 1043.1(a)(2)	§ 387.301(a)(2).
387.303(b)(2) table note	§ 1043.2(b)(2)(d)	§ 387.303(b)(2).
387.303(b)(4)	49 U.S.C. 10530 and 49 CFR part 1171	49 U.S.C. 13902(c) and 49 CFR part 368.
387.303(b)(4)	49 CFR 1043.8	49 CFR 387.315.
387.303(b)(4)	§ 1043.1(a)(1)	§ 387.301(a)(1).
387.303(b)(4)	§ 1043.7(a)(6)	§ 387.313(a)(6).
387.303(b)(4)	§ 1043.7(d)	§ 387.313(d).
387.309(a)(2)	§ 1043.2	§ 387.303.
387.309(b)	49 U.S.C. 10927	49 U.S.C. 13906.
387.311(a)	§ 1043.2(b)(1) [in 4 places]	§ 387.303(b)(1) [in 4 places].
387.311(a)	§ 1043.2(b)(2) [in 3 places]	§ 387.303(b)(2) [in 3 places].
387.311(a) note	§ 1043.2(b)(1)	§ 387.303(b)(1).
387.311(b)	§ 1043.2(c) [in 2 places]	§ 387.303(c) [in 2 places].
387.313(a)(2)	§ 1043.2(b)(1)	§ 387.303(b)(1).
387.313(a)(2)	§ 1043.2 (b)(1) or (b)(2)	§ 387.303 (b)(1) or (b)(2).
387.313(a)(2)	§ 1043.2(c)	§ 387.303(c).
387.313(a)(2)	§ 1043.2(b)(4)	§ 387.303(b)(4).
387.313(a)(2) note	§ 1043.6 [in 2 places]	§ 387.311 [in 2 places].
387.313(a)(2) note	1043.7	387.313.
387.313(a)(3)	§ 1043.2(b)(1) or (b)(2) [in 2 places]	§ 387.303(b)(1) or (b)(2) [in 2 places].
387.313(a)(3)	§ 1043.2(b)(4)	§ 387.303(b)(4).
387.313(a)(4)	§ 1043.2 (b)(1) or (b)(2)	§ 387.303 (b)(1) or (b)(2).
387.313(a)(4)	§ 1043.2(b)(1)	§ 387.303(b)(1).
387.313(d)	49 U.S.C. 10927	49 U.S.C. 13906.

Section	Remove	Add
387.317	§ 1043.1(d)	§ 387.301(d).
387.321	§ 1043.2(b)	§ 387.303(b).
387.321	§§ 1043.5, 1043.6, 1043.7, 1043.8, 1043.9 and 1043.10	§§ 387.309 through 387.319.
387.321	§ 1043.8(a)	§ 387.315(a).
387.321	49 U.S.C. 10523 and 10526	49 U.S.C. 13503 and 13506.
387.323(c)	§ 1043.2(b)(1)	§ 387.303(b)(1).
387.323(c)	§ 1043.2(b)(2)	§ 387.303(b)(2).
387.403(a)	§ 1084.3	§ 387.405.
387.403(b)	§ 1084.3	§ 387.405.
387.403(b)	49 CFR 1043.2(b)(2)	49 CFR 387.303(b)(2).
387.405	49 CFR 1043.2	49 CFR 387.303.
387.407(a)	§ 1084.3	§ 387.405.
387.407(a)	49 CFR part 1043	49 CFR part 387, subpart C.
387.411(b)	49 U.S.C. 10927(c)	49 U.S.C. 13906(c).
387.413(a)	49 CFR part 1043	49 CFR part 387, subpart C.
387.417(a)	49 CFR 1043.10(a)	49 CFR 387.319(a).
387.417(b)	§ 1084.7(d)	§ 387.413(d).
387.419	49 CFR 1043.12	49 CFR 387.323.

PART 390—FEDERAL MOTOR CARRIER SAFETY REGULATIONS; GENERAL

11. The authority citation for part 390 continues to read as follows:

Authority: 49 U.S.C. 13301, 13902, 31132, 31133, 31136, 31502, 31504; sec. 204, Pub. L. 104–88, 109 Stat. 803, 941; 49 U.S.C. 201 note; and 49 CFR 1.48.

12. In part 390, in the list below, for each section indicated in the left column, remove the word or words indicated in the middle column wherever they appear in the section, and add the words indicated in the right column:

Section	Remove	Add
390.5, Exempt intracity zone	ICC in 49 CFR part 1048, revised as of October 1, 1975	FHWA in 49 CFR part 372, subpart B.
390.21(a)	49 CFR part 1058	49 CFR part 390, subpart D.
390.401(a)	§ 1058.2	§ 390.403.

Appendix F to Subchapter B—Commercial Zones

13. In subchapter B, appendix F, in the list below, for each section indicated in the left column, remove the word or words indicated in the middle column wherever they appear in the section, and add the words indicated in the right column:

Section	Remove	Add
Appendix F:		
Intro Note	49 CFR part 1048	49 CFR part 372, subpart B.
Sec. 1(a)	§ 1048.101	§ 372.241.
Sec. 5(a)	§ 1048.101	§ 372.241.
Sec. 11(a)	§ 1048.101	§ 372.241.
Sec. 11(b)	§ 1048.1(b)(1) [in 2 places]	§ 372.201 [in 2 places].
Sec. 12(a)	§ 1048.101	§ 372.241.
Sec. 12(b)	§ 1048.1(b)(1) [in 2 places]	§ 372.201 [in 2 places].
Sec. 34	§ 1048.101	§ 372.241.
Sec. 38(a)	§ 1048.101	§ 372.241.
Sec. 39(a)	§ 1048.101	§ 372.241.
Sec. 45 intro	§ 1048.101	§ 372.241.

[FR Doc. 97–25204 Filed 9–23–97; 8:45 am]

BILLING CODE 4910–22–P

Proposed Rules

Federal Register
Vol. 62, No. 185
Wednesday, September 24, 1997

This section of the FEDERAL REGISTER contains notices to the public of the proposed issuance of rules and regulations. The purpose of these notices is to give interested persons an opportunity to participate in the rule making prior to the adoption of the final rules.

FEDERAL HOUSING FINANCE BOARD

12 CFR Parts 900, 932 and 933

[No. 97–61]

RIN 3069–AA41

Membership Eligibility

AGENCY: Federal Housing Finance Board.

ACTION: Proposed rule.

SUMMARY: The Federal Housing Finance Board (Finance Board) is proposing to amend the definition of the term ''State'' in its Membership Regulation to include the U.S. Territory of American Samoa (American Samoa) and the U.S. Commonwealth of the Northern Mariana Islands (the Northern Mariana Islands). Institutions organized under the laws of American Samoa and the Northern Mariana Islands, therefore, will be eligible to apply for Federal Home Loan Bank (Bank) membership. In accordance with these changes, the Finance Board also is proposing to clarify in its regulations that the Seattle Bank District includes American Samoa and the Northern Mariana Islands. In addition, the Finance Board is proposing to designate Hawaii as the State in which members with a principal place of business in American Samoa, the Northern Mariana Islands, or Guam, shall be deemed to be located for purposes of election of Bank directors.

DATES: Comments on this proposed rule must be received in writing on or before October 24, 1997.

ADDRESSES: Comments should be mailed to: Elaine L. Baker, Secretary to the Board, Federal Housing Finance Board, 1777 F Street NW., Washington, DC 20006. Comments will be available for public inspection at this address.

FOR FURTHER INFORMATION CONTACT: Sharon B. Like, Senior Attorney-Adviser, (202) 408–2930, Office of General Counsel, Federal Housing Finance Board, 1777 F Street NW., Washington, DC 20006.

SUPPLEMENTARY INFORMATION:

I. Statutory and Regulatory Background

A. Membership Eligibility Requirement—Definition of State

Under the Federal Home Loan Bank Act (Act), the Finance Board is responsible for the supervision and regulation of the 12 Banks, which provide advances and other financial services to their member institutions. *See* 12 U.S.C. 1422a(a). Institutions may become members of a Bank if they meet certain membership eligibility and minimum stock purchase criteria set forth in the Act and the Finance Board's implementing Membership Regulation. *See id.* §§ 1424, 1426, 1430(e)(3); 12 CFR part 933.

Specifically, under the Act and the Membership Regulation, applicants for Bank membership must satisfy, among other requirements, the requirement that they are ''duly organized under the laws of any State or of the United States.'' *See* 12 U.S.C. 1424(a)(1)(A); 12 CFR 933.6(a)(1), 933.7. Section 2(3) of the Act defines the term ''State'' as follows:

The term *State* includes the District of Columbia, Guam, Puerto Rico, and the Virgin Islands of the United States.

See 12 U.S.C. 1422(3). Guam and the U.S. Virgin Islands are U.S. Territories, while Puerto Rico is a U.S. Commonwealth.

Section 933.1(cc) of the Finance Board's Membership Regulation implements the statutory definition by defining the term *State* as follows:

State means a State, the District of Columbia, Guam, Puerto Rico, and the Virgin Islands of the United States.

See 12 CFR 933.1(cc). The regulatory definition does not specifically include any other U.S. Territories, Commonwealths or Dependencies within the meaning of *State*. Therefore, financial institutions organized under the laws of such other jurisdictions currently are not eligible for Bank membership, unless other specific laws or agreements executed by the United States and these jurisdictions make the Act applicable to such jurisdictions.

The Finance Board believes that the term *State* under the Membership Regulation should be defined comprehensively to include all other U.S. Territories, Commonwealths and Dependencies that share a political status similar to that of the specified entities in the statute, *i.e.*, Guam, the U.S. Virgin Islands, and Puerto Rico. In addition, if any specific laws or agreements executed by the United States and particular jurisdictions make the Act applicable to such jurisdictions, then the regulatory definition of the term *State* should be amended to include those jurisdictions, consistent with the laws or agreements.

Accordingly, the Finance Board undertook a broad analysis of existing and former U.S. Territories, Commonwealths and Dependencies to determine whether any of the jurisdictions satisfy the above requirements. The research revealed that only American Samoa and the Northern Mariana Islands meet the requirements, as further discussed below. Therefore, the Finance Board is proposing to amend § 933.1(cc) of the Membership Regulation to include American Samoa and the Northern Mariana Islands in the definition of *State*. In order to ensure that all eligible jurisdictions are included in the revised definition of *State* for membership purposes, the Finance Board requests commenters to identify any other jurisdictions not included in proposed § 933.1(cc) that have U.S. Territory, Commonwealth, or Dependency status, or that have laws or agreements with the United States that make the Act applicable to such jurisdictions.

B. Designation of Member's State Location for Purposes of Election of Bank Directors

The Act sets forth specific procedures for the election of directors by the members to the boards of the Banks. *See* 12 U.S.C. 1427; 12 CFR 932. Each elective directorship is designated by the Finance Board as representing the members located in a particular State. *See* 12 U.S.C. 1427(b). If the principal place of business of a member is located in a *State* as defined in section 7(e) of the Act, the Finance Board must designate such State as the State in which the member is located for director election purposes. *See id.* § 1427(c). Section 7(e) defines *State*, for purposes of section 7, as ''the States of the Union, the District of Columbia, and the Commonwealth of Puerto Rico.'' *See id.* § 1427(e). For members whose principal place of business is not located in a *State* as defined in section 7(e), the Finance Board is required to designate a State in which such

members shall be deemed to be located for director election purposes. *See id.* § 1427(c).

American Samoa and the Northern Mariana Islands are not included in the section 7(e) definition of *State.* Accordingly, the Finance Board is required to designate a *State* where members with a principal place of business located in American Samoa or the Northern Mariana Islands shall be deemed to be located. The Finance Board is proposing to amend § 932.11(b) of its regulations to designate Hawaii as that State.

II. Analysis of Proposed Rule

A. American Samoa—§ 933.1(cc)

American Samoa is a Territory of the United States that is administered by the U.S. Department of Interior, and which has enacted its own banking laws. *See* 48 U.S.C. 1661; Executive Order No. 10264, 16 FR 6419 (June 29, 1951); Title 28, American Samoa Code Ann. (Book 1988). As a U.S. Territory, American Samoa has a political status similar to that of the U.S. Territories of Guam and the U.S. Virgin Islands, which are included as *States* under the Act and the current Membership Regulation. *See* 12 U.S.C. 1422(3); 12 CFR 933.1(cc).[1] Moreover, the Finance Board recently has been urged by a number of parties to expand the definition of *State* in the Membership Regulation to include American Samoa, so that financial institutions organized under the laws of American Samoa would be eligible for Bank membership. In particular, an American Samoan bank, whose deposits are insured by the Federal Deposit Insurance Corporation, has expressed interest in becoming a member of the Seattle Bank. In addition, bills currently are being considered in Congress that would achieve this same result legislatively. Accordingly, the Finance Board is proposing to amend § 933.1(cc) of the Membership Regulation to include American Samoa in the definition of *State.*

B. The Northern Mariana Islands—§ 933.1(cc)

The Northern Mariana Islands is a former U.S.-administered Trust Territory that is now a Commonwealth of the United States. As a U.S. Commonwealth, the Northern Mariana Islands has a political status similar to that of the Commonwealth of Puerto Rico, which is included as a *State* under the Act and the current Membership Regulation. *See id.* Moreover, specific provisions of the Covenant Agreement executed by the United States and the Northern Mariana Islands already make the Act applicable to the Northern Mariana Islands. *See* ''Covenant To Establish A Commonwealth Of The Northern Mariana Islands In Political Union With The United States Of America,'' §§ 502(a)(1), 502(a)(2) (1986); ''The Second Interim Report of the Northern Mariana Islands Commission on Federal Laws to the Congress of the United States,'' at 278–79 (Aug. 1985); Presidential Proclamation No. 5207, 49 FR 24365 (June 7, 1984) (set forth at 48 U.S.C. 1681 note). Accordingly, the Finance Board is proposing to amend § 933.1(cc) of the Membership Regulation to include the Northern Mariana Islands in the definition of *State.*

C. Other Pacific Islands

The Federated States of Micronesia, the Republic of the Marshall Islands, and the Republic of Palau were once U.S.-administered Trust Territories in the Pacific, but now have the status of independent, self-governing foreign nations. Nor do there appear to be any laws or contractual provisions in the Compacts of Free Association executed by the United States and these nations, respectively, that make the Act applicable to these nations. Accordingly, these nations are not included in proposed § 933.1(cc).

Other existing U.S. Pacific Island Territories generally are either uninhabited or contain tiny, nonpermanent military populations closed to the public. Thus, the Act would not be applicable to such Territories.

D. Inclusion of American Samoa and the Northern Mariana Islands in the Seattle Bank District—Appendix to Subpart A of Part 900

The Appendix to Subpart A of Part 900 of the Finance Board's regulations lists the States which comprise each of the 12 Bank Districts, with a reference to ''Pacific Islands'' included under Federal Home Loan Bank District 12 (the Seattle Bank District). *See* Appendix to Subpart A of Part 900—Federal Home Loan Banks. Consistent with the proposed amendments discussed above, the Finance Board is proposing to amend the Appendix by replacing the reference to the ''Pacific Islands'' under the Seattle Bank District with specific references to American Samoa and the Northern Mariana Islands.

E. Designation of State Location for Members With Principal Place of Business in American Samoa, the Northern Mariana Islands, or Guam—§ 932.11(b)

For the reasons discussed above, the Finance Board is proposing to amend § 932.11(b) of its regulations to provide that members with a principal place of business located in American Samoa or the Northern Mariana Islands shall be deemed to be located in Hawaii for purposes of election of Bank directors. The proposed rule also codifies the Finance Board's existing designation of Hawaii as the State where members with a principal place of business in Guam are deemed to be located for director election purposes.

III. Regulatory Flexibility Act

The proposed rule implements statutory requirements binding on all Banks and on all applicants for Bank membership, regardless of their size. The Finance Board is not at liberty to make adjustments to those requirements to accommodate small entities. The proposed rule does not impose any additional regulatory requirements that will have a disproportionate impact on small entities. Therefore, in accordance with section 605(b) of the Regulatory Flexibility Act, *see* 5 U.S.C. 605(b), the Finance Board hereby certifies that this proposed rule, if promulgated as a final rule, will not have a significant economic impact on a substantial number of small entities.

IV. Paperwork Reduction Act

The proposed rule does not contain any collections of information pursuant to the Paperwork Reduction Act of 1995. *See* 44 U.S.C. 3501 *et seq.* Consequently, the Finance Board has not submitted any information to the Office of Management and Budget for review.

List of Subjects

12 CFR Part 900

Organizations and functions (Government agencies).

12 CFR Part 932

Conflict of interests, Federal home loan banks.

12 CFR Part 933

Credit, Federal home loan banks, Reporting and recordkeeping requirements.

Accordingly, the Finance Board hereby proposes to amend title 12, chapter IX, parts 900, 932 and 933, *Code of Federal Regulations,* as follows:

[1] There do not appear to be any laws or contractual provisions in the cession agreements executed by the United States and American Samoa making the Act applicable to American Samoa.

PART 900—DESCRIPTION OF ORGANIZATION AND FUNCTIONS

1. The authority citation for part 900 is revised to read as follows:

Authority: 5 U.S.C. 552; 12 U.S.C. 1422b(a), 1423.

2. The appendix to subpart A of part 900 is designated as appendix A to subpart A of part 900, the appendix heading is revised, and the parenthetical under FEDERAL HOME LOAN BANK DISTRICT 12 is revised to read as follows:

Appendix A to Subpart A of Part 900—Federal Home Loan Banks

* * * * *

Federal Home Loan Bank District 12

(Alaska, American Samoa, the Commonwealth of the Northern Mariana Islands, Guam, Hawaii, Idaho, Montana, Oregon, Utah, Washington, Wyoming)

* * * * *

PART 932—ORGANIZATION OF THE BANKS

3. The authority citation for part 932 is revised to read as follows:

Authority: 12 U.S.C. 1422, 1422a, 1422b, 1423, 1426, 1427, 1432; 42 U.S.C. 8101 *et seq.*

4. Section 932.11 is amended by revising paragraph (b) to read as follows:

§ 932.11 Location of member.

* * * * *

(b) For purposes of this part, members with a principal place of business located in the Virgin Islands of the United States shall be deemed to be located in Puerto Rico, and members with a principal place of business located in American Samoa, the Commonwealth of the Northern Mariana Islands, or Guam, shall be deemed to be located in Hawaii.

PART 933—MEMBERS OF THE BANKS

5. The authority citation for part 933 is revised to read as follows:

Authority: 12 U.S.C. 1422, 1422a, 1422b, 1423, 1424, 1426, 1430, 1442.

6. Section 933.1 is amended by revising paragraph (cc) to read as follows:

§ 933.1 Definitions.

* * * * *

(cc) *State* includes a State of the United States, American Samoa, the Commonwealth of the Northern Mariana Islands, the District of Columbia, Guam, Puerto Rico, or the Virgin Islands of the United States.

Dated: September 15, 1997.

* * * * *

By the Board of Directors of the Federal Housing Finance Board.

Bruce A. Morrison,

Chairman.

[FR Doc. 97–25304 Filed 9–23–97; 8:45 am]

BILLING CODE 6725–01–P

DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. 97–ANE–28–AD]

RIN 2120–AA64

Airworthiness Directives; General Electric Company (GE) GE90–76B Model Turbofan Engines

AGENCY: Federal Aviation Administration, DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: This document proposes the adoption of a new airworthiness directive (AD) that is applicable to General Electric Company (GE) GE90–76B model turbofan engines. This proposed AD would require reduced life limits for certain rotating components installed in GE90–76B engines. This proposal is prompted by the results of a refined life analysis performed by the manufacturer which revealed minimum calculated low cycle fatigue lives lower than the published low cycle fatigue retirement lives for certain rotating components installed in the GE90–76B engines. If not corrected, this condition could result in a low cycle fatigue failure of a rotating component and possibly an uncontained engine failure.

DATES: Comments must be received by November 24, 1997.

ADDRESSES: Submit comments in triplicate to the Federal Aviation Administration (FAA), New England Region, Office of the Assistant Chief Counsel, Attention: Rules Docket No. 97–ANE–28–AD, 12 New England Executive Park, Burlington, MA 01803–5299. Comments also may be submitted to the Rules Docket by using the following Internet address: ''9-ad-engineprop@faa.dot.gov''. All comments must contain the Docket No. in the subject line of the comment. Comments may be inspected at this location between 8:00 a.m. and 4:30 p.m., Monday through Friday, except Federal holidays.

The service information referenced in the proposed rule may be obtained from General Electric Company Technical Services, Attention: Leader for distribution/microfilm, 10525 Chester Road, Cincinnati, OH 45215, telephone (513) 672–8400 Ext. 114, Fax (513) 672–8422. This information may be examined at the FAA, New England Region, Office of the Assistant Chief Counsel, 12 New England Executive Park, Burlington, MA.

FOR FURTHER INFORMATION CONTACT: John Golinski, Aerospace Engineer, Engine Certification Office, FAA, Engine & Propeller Directorate, 12 New England Executive Park, Burlington, MA 01803–5299; Telephone (617) 238–7135, Fax (617) 238–7199.

SUPPLEMENTARY INFORMATION:

Comments Invited

Interested persons are invited to participate in the making of the proposed rule by submitting such written data, views, or arguments as they may desire. Communications should identify the rules docket number and be submitted in triplicate to the address specified above. All communications received on or before the closing date for comments, specified above, will be considered before taking action on the proposed rule. The proposals contained in this notice may be changed in light of the comments received.

Comments are specifically invited on the overall regulatory, economic, environmental, and energy aspects of the proposed rule. All comments submitted will be available, both before and after the closing date for comments, in the Rules Docket for examination by interested persons. A report summarizing each FAA-public contact concerned with the substance of this proposal will be filed in the rules docket.

Commenters wishing the FAA to acknowledge receipt of their comments submitted in response to this notice must submit a self-addressed, stamped postcard on which the following statement is made: ''Comments to Docket Number 97–ANE–28–AD.'' The postcard will be date stamped and returned to the commenter.

Availability of NPRMs

Any person may obtain a copy of this NPRM by submitting a request to the FAA, New England Region, Office of the Assistant Chief Counsel, Attention: Rules Docket No. 97–ANE–28–AD, 12 New England Executive Park, Burlington, MA 01803–5299.

Discussion

As part of the substantiation for the Federal Aviation Administration's (FAA) certification of the GE90–92B engine, GE submitted an analysis to the

FAA defining the low cycle fatigue life of GE 90 rotating components. The analysis included an updated material property data base and other refinements that resulted in a reduction of the published low cycle fatigue retirement life limit for certain rotating components. The FAA has determined that this AD is necessary to mandate reduced life limits for certain rotating components installed in GE90–76B engines. If not corrected, this condition could result in a low cycle fatigue failure of a rotating component and possibly an uncontained engine failure.

The FAA has reviewed and approved the technical contents of General Electric Company GE90 Alert Service Bulletin (ASB) No. 72–A318, dated June 27, 1997, that describes reduced life limits for certain rotating components. Since an unsafe condition has been identified that is likely to exist or develop on other products of this same type design, the proposed AD would require reduced life limits for certain rotating components. The actions would be required to be accomplished in accordance with the ASB described previously.

There are approximately twenty-five engines of the affected design in the worldwide fleet. The manufacturer has advised the FAA that there are currently no engines installed on aircraft of U.S. registry that would be affected by this proposed AD. Therefore, there is no associated cost impact on U.S. operators as a result of this proposed AD.

The FAA estimates that the most representative engines would have four of the seven life-limited-reduced components installed. Assuming the four components are the High Pressure Compressor Rotor (HPCR) 2–6 spool, HPCR stage 7 disk, HPCR CDP seal and the Low Pressure Turbine cone shaft and that the parts cost is proportional to the reduction of the low cycle fatigue retirement lives, the required parts would cost approximately $189,123 per engine. Based on these figures, the FAA estimates the total cost impact of this proposed AD would be $189,123 per engine.

The regulations proposed herein would not have substantial direct effects on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government. Therefore, in accordance with Executive Order 12612, it is determined that this proposal would not have sufficient federalism implications to warrant the preparation of a Federalism Assessment.

For the reasons discussed above, I certify that this proposed regulation: (1) Is not a ''significant regulatory action'' under Executive Order 12866; (2) is not a ''significant rule'' under the DOT Regulatory Policies and Procedures (44 FR 11034, February 26, 1979); and (3) if promulgated, will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act. A copy of the draft regulatory evaluation prepared for this action is contained in the rules docket. A copy of it may be obtained by contacting the rules docket at the location provided under the caption **ADDRESSES**.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Safety.

The Proposed Amendment

Accordingly, pursuant to the authority delegated to me by the Administrator, the Federal Aviation Administration proposes to amend part 39 of the Federal Aviation Regulations (14 CFR part 39) as follows:

PART 39—AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. Section 39.13 is amended by adding the following new airworthiness directive:

General Electric Company: Docket No. 97–ANE–28–AD.

Applicability: General Electric Company (GE) GE90–76B model turbofan engines installed on but not limited to Boeing 777 aircraft.

Note 1: This airworthiness directive (AD) applies to each engine identified in the preceding applicability provision, regardless of whether it has been modified, altered, or repaired in the area subject to the requirements of this AD. For engines that have been modified, altered, or repaired so that the performance of the requirements of this AD is affected, the owner/operator must request approval for an alternative method of compliance in accordance with paragraph (c) of this AD. The request should include an assessment of the effect of the modification, alteration, or repair on the unsafe condition addressed by this AD; and, if the unsafe condition has not been eliminated, the request should include specific proposed actions to address it.

Compliance: Required as indicated, unless accomplished previously.

To prevent a low cycle fatigue failure of a rotating component and possibly an uncontained engine failure, accomplish the following:

(a) Remove from service those components listed in Table 1 of GE Alert Service Bulletin (ASB) No. 72–A318, dated June 27, 1997, and replace with a serviceable component, prior to exceeding the new cyclic life limits established in paragraph (d) of ASB No. 72–A318, dated June 27, 1997.

Note 2: These revised component life limits will be added to the GE90 Engine Manual, Chapter 05–11–00, Life Limits 001 in the August 1, 1997, Revision.

(b) Except as provided in paragraph (c) of this AD, no replacement times may be approved for these parts.

(c) An alternative method of compliance or adjustment of the compliance time that provides an acceptable level of safety may be used if approved by the Manager, Engine Certification Office. Operators shall submit their requests through an appropriate FAA Principal Maintenance Inspector, who may add comments and then send it to the Manager, Engine Certification Office.

Note 3: Information concerning the existence of approved alternative methods of compliance with this airworthiness directive, if any, may be obtained from the Engine Certification Office.

(d) Special flight permits may be issued in accordance with sections 21.197 and 21.199 of the Federal Aviation Regulations (14 CFR 21.197 and 21.199) to operate the aircraft to a location where the requirements of this AD can be accomplished.

Issued in Burlington, Massachusetts, on September 18, 1997.

Mark C. Fulmer,

Acting Manager, Engine and Propeller Directorate, Aircraft Certification Service.

[FR Doc. 97–25312 Filed 9–23–97; 8:45 am]

BILLING CODE 4910–13–U

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

21 CFR Part 312

[Docket No. 97N–0030]

Investigational New Drug Applications; Proposed Amendment to Clinical Hold Regulations for Products Intended for Life-Threatening Diseases

AGENCY: Food and Drug Administration, HHS.

ACTION: Proposed rule.

SUMMARY: The Food and Drug Administration (FDA) is proposing to amend the provisions of its regulations governing investigational new drug applications (IND's) to permit FDA to place a clinical hold on one or more studies under an IND involving a drug that is intended to treat a life-threatening disease affecting both genders if men or women with reproductive potential who have the disease and are otherwise eligible but are excluded from participation in an

investigation only because of a risk or potential risk of reproductive or developmental toxicity from use of the investigational drug. Women have been excluded in the past from early clinical trials because of a risk or potential risk of reproductive or developmental toxicity. Therefore, the primary goal of this proposed amendment is to ensure that women with reproductive potential who have a life-threatening disease are not automatically excluded in the future for that reason. The proposed rule would not impose requirements to enroll or recruit a specific number of men or women with reproductive potential.

The proposal would implement a recommendation of both the National Task Force on AIDS Drug Development (the AIDS Task Force) and the Presidential Advisory Council on Human Immunodeficiency Virus/ Acquired Immune Deficiency Syndrome (HIV/AIDS).

DATES: Submit written comments by December 23, 1997. FDA proposes that any final rule that may issue based on this proposal become effective 60 days after its date of publication in the **Federal Register**.

ADDRESSES: Submit written comments to the Dockets Management Branch (HFA305), Food and Drug Administration, 12420 Parklawn Dr., rm. 1–23, Rockville, MD 20857.

FOR FURTHER INFORMATION CONTACT: Nancy E. Derr, Center for Drug Evaluation and Research (HFD–5), Food and Drug Administration, 5600 Fishers Lane, Rockville, MD 20857, 301–594–5400, FAX 301–594–6197.

SUPPLEMENTARY INFORMATION:

I. Introduction

On January 19, 1995, the AIDS Task Force made a series of recommendations related to women's participation in the drug development process, including the recommendation that women with reproductive potential not be excluded from studies of drugs being tested for use against life-threatening diseases, particularly HIV- and AIDS-related diseases. This recommendation was based, in part, on data provided by the HIV Law Project of the AIDS Service Center (Ref. 1). The data demonstrated that participation of women in AIDS clinical drug trials was low.[1] In the view of members of the AIDS Task Force, this low rate of participation raised doubts as to whether a sufficient number of women were being included in these clinical trials to provide clinically meaningful information about the effects of HIV and AIDS drugs in the women who would be using them. These data also raised questions and concerns among women with HIV regarding their ability to participate in trials for promising new experimental therapies. On December 8, 1995, the Presidential Advisory Council on HIV/ AIDS adopted the AIDS Task Force's recommendation that FDA amend its regulations to prevent the exclusion of women who have a life-threatening disease from any phase of clinical investigations for that disease because of their reproductive potential. If adopted, this proposed rule would implement that recommendation.

FDA's policies regarding the participation of women in clinical investigations have evolved over time. The agency now believes it is important to codify its policies regarding the participation of women with reproductive potential in clinical investigations of drug products intended to treat life-threatening diseases. The proposed amendments to the clinical hold regulations address the exclusion from clinical trials of members of either gender who have a life-threatening disease. The primary intent, however, is to ensure that women who have a life-threatening disease are not automatically excluded from investigational trials of drug products for that disease due to a perceived risk or potential risk of reproductive or developmental toxicity from the use of the investigational drug. The proposal would not apply to clinical studies conducted: (1) Exclusively in healthy volunteers; (2) under special circumstances, such as studies of a single-gender population (e.g., studies evaluating the excretion of a drug in semen or its effects on menstrual function); or (3) in men, as long as a study that does not exclude subjects with reproductive potential has been planned or is being conducted in women. For the purposes of this rulemaking, FDA does not intend the phrase ''women with reproductive potential'' to include pregnant women. The agency acknowledges the need for more information on the safety and effectiveness of drugs and biological products in pregnant women and is continuing to explore this complex issue in other forums.

II. Clinical Hold Regulations

A clinical hold is an order, under § 312.42 (21 CFR 312.42), that FDA may issue to a sponsor to delay a proposed clinical investigation or to suspend an ongoing investigation for the development of a new drug, antibiotic drug, or biological product. A clinical hold may apply to one or more of the investigations under an IND. When FDA places a proposed study on clinical hold, subjects in that study may not be given the investigational drug. When FDA places an ongoing study on clinical hold, no new subjects may be recruited to the study and placed on the investigational drug; subjects already in the study should be taken off the therapy involving the investigational drug unless FDA specifically permits continuation of the therapy in the interest of patient safety.

FDA may place a clinical hold on a proposed or ongoing phase 1, phase 2, or phase 3 investigation (§ § 312.42(b)(1) and (b)(2)), a proposed or ongoing treatment IND or treatment protocol (§ 312.42(b)(3)), or any investigation that is not designed to be adequate and well controlled (§ 312.42(b)(4)). Generally, FDA will attempt to discuss and resolve the matter with the sponsor before issuing a clinical hold order unless subjects are exposed to immediate and serious risk (§ 312.42(c)). When the deficiency that prompts a clinical hold is corrected by the sponsor, the investigation generally may resume (§ 312.42(e)).

III. Evolution of FDA Policy Regarding Participation of Women in Clinical Investigations

Although the proposed amendments to the clinical hold regulations address the exclusion from trials for drug products to treat a life-threatening disease of members of either gender who have the disease, the primary intent of the proposed amendments is to ensure that women who have a life-threatening disease are not excluded from clinical trials solely because of their reproductive potential. Since 1977, when FDA first issued guidance on the participation of women in clinical trials, women with reproductive potential often have been excluded from early clinical trials due to the perceived risk or potential risk of reproductive or developmental toxicity. As the following discussion shows, however, views on the participation of women, as well as corresponding FDA guidance and regulations pertaining to clinical trials of investigational drugs, reflect a

[1] As of January 1992, 14,799 participants were enrolled in U.S. AIDS Clinical Trial Group studies sponsored by the National Institute of Allergy and Infectious Diseases, of whom only 1,151 were adult women. (Pearl, M., et al., ''Women in U.S. Government Clinical Trials,'' VIII International Conference on AIDS, 8(2: B235, 1992.)

In 1993, 21,598 participants were enrolled, while only 1,952 were adult women. (Korvick, J.A., ''Trends in Federally Sponsored Clinical Trials,'' in *Until the Cure: Caring for Women With HIV*, A. Kurth, editor, pp. 94–103, 1993).

significant evolution of thought during the past two decades within the agency and the scientific community. In addition, during this period considerable public attention has been paid to questions about the participation of women in general in clinical trials. The following background information highlights key FDA statements on the inclusion of women, especially women with reproductive potential, in the clinical drug testing process. Throughout, the phrase ''reproductive toxicity'' refers to toxicities to reproductive organs, while the term ''developmental toxicity'' refers to toxicities to potential offspring.

The agency first provided formal guidance on the participation of women with reproductive potential in clinical trials in a 1977 guideline entitled ''General Considerations for the Clinical Evaluation of Drugs'' (the 1977 guideline). Developed within the protective environment brought on by the thalidomide experience a decade earlier, the 1977 guideline stated that women of childbearing potential should not be included in phase 1 and early phase 2 trials because of the potential for reproductive or developmental toxicity. Women with childbearing potential could be included in later phase 2 and phase 3 studies, as long as animal teratogenicity and the female part of animal fertility studies had been completed and there was some evidence of effectiveness from earlier studies. The 1977 guideline made an exception to this recommendation for early trials involving drug products intended to treat life-threatening diseases, even in the absence of adequate reproduction studies in animals. Despite this exception, however, the exclusion of women of reproductive potential from early trials was in some cases applied to trials for drug products to treat life-threatening diseases.

Since the 1977 guideline was issued, views have evolved about the participation of women in clinical trials. Views also have evolved about informed individuals assuming the risks of investigational products. Recognition has increased in the agency and among the public that patients, especially those with a life-threatening disease, are willing to accept considerable risks to participate in studies that may benefit them. There is increased public recognition of ethical issues such as fairness and an individual patient's ability to participate in decisions that involve personal risk. There is growing understanding that information about population subgroups, e.g., subsets grouped by age, gender, or race, is needed to evaluate the safety and effectiveness of therapies and to refine labeling, patient selection, and dose selection in those groups. Failure to obtain such information may limit the usefulness of a treatment or expose a segment of the population to risk. These perspectives have influenced FDA policy since the early 1980's.

In the **Federal Register** of July 22, 1993 (58 FR 39406), FDA issued a ''Guideline for the Study and Evaluation of Gender Differences in the Clinical Evaluation of Drugs'' (the 1993 guideline). That guideline revoked the 1977 guideline's recommendation regarding restrictions on the participation of women with reproductive potential in early clinical trials, including clinical pharmacology studies (e.g., dose tolerance, bioavailability, and mechanism of action studies) and early therapeutic studies. The 1993 guideline left the determination about whether the risks and benefits support the participation of women with reproductive potential to patients, investigators, sponsors, and institutional review boards (IRB's).

Although the 1993 guideline does not require participation of women in any particular trial, it sets forth FDA's general expectations regarding the inclusion of both women and men in drug development, analyses of clinical data by gender, assessment of potential pharmacokinetic differences between genders, and conduct of specific additional studies in women, where indicated. The 1993 guideline is consistent with an earlier guideline, issued in 1988 and entitled, ''Guideline for the Format and Content of the Clinical and Statistical Sections of New Drug Applications'' published in the **Federal Register** of October 7, 1988 (53 FR 39524), in which FDA advised that new drug applications (NDA's) should include analyses of data for population subsets, including age, gender, and race, to identify subgroup differences in effectiveness and adverse reactions to investigational drugs. The 1993 guideline notes that participants in clinical studies should, in general, reflect the population that will receive the drug once it is marketed and encourages the participation of women, whether or not they have a serious disease, in early phases of all clinical trials. It points out that including women early is particularly important when a drug is intended for a serious disease and may become available rapidly, for example, through distribution under a treatment IND (§§ 312.34 and 312.35 (21 CFR 312.34 and 312.35)), or marketing under subpart E of part 601 (21 CFR part 601) and consisting of §§ 601.40 through 601.46 or subpart H of part 314 (21 CFR part 314) and consisting of §§ 314.500 through 314.560. (See section IV.A. of this document for a description of these procedures.)

FDA has long recognized the importance of gender data in evaluating the safety and efficacy of a drug. This is reflected in other FDA guidances issued in 1993 (''New Drug Evaluation Guidance Document: Refusal to File'' and ''Center for Biologics Evaluation and Research (CBER): Refusal to File (RTF) Guidance for Product License Applications (PLA's) and Establishment License Applications (ELA's)'' (58 FR 38770, July 20, 1993). These documents state that FDA may refuse to file an application if it contains inadequate evaluation of the safety and/or effectiveness of a drug, biological therapeutic, or vaccine in specific populations, such as in women, intended to use the product.

FDA also recently proposed a rule that would codify expectations regarding presentation in NDA's of safety and effectiveness data by gender as described in the 1993 guideline. Although it would not require the inclusion of women with reproductive potential in clinical investigations, the rule would require the presentation in NDA's of certain data by specific population subgroups, including women, who are likely to receive the drug once it is marketed (60 FR 46794, September 8, 1995).

The 1977 guideline never recommended excluding women with reproductive potential from trials for drugs to treat life-threatening diseases. Moreover, the 1993 guideline recommended that the exclusion of such women be removed from all trials. Nevertheless, a recent limited agency review of clinical trial protocols dealing with antiviral drugs revealed that women with reproductive potential are still being excluded from some protocols of some investigational trials for drug products intended to treat HIV, a life-threatening disease. The agency believes that this violates ethical principles and in some cases could lead to inadequate data on use in women prior to wide availability of the drug. The agency has concluded that women with reproductive potential who have a life-threatening disease should no longer be excluded from investigational clinical trials for drug products to treat that disease because of a risk or potential risk of reproductive or developmental toxicity from use of the investigational drug, as long as patient volunteers are fully informed of the risks, in compliance with informed

consent regulations in part 50 (21 CFR part 50).

IV. Rationale for the Proposed Rule

In the past, women with a life-threatening disease who have reproductive potential often have been excluded from early investigational clinical trials for that disease because of the potential risk of reproductive or developmental toxicity. As a result, although it applies to the exclusion of either gender, the primary goal of this proposed rule is to ensure that women who have a life-threatening disease are not excluded from investigational drug studies for that disease because of their reproductive potential.

In lengthy discussions with representatives of industry and the public during the development of this proposal (Ref. 2), the view was expressed that many early clinical studies involving life-threatening diseases offer the potential for therapeutic benefit. In some cases, for example, participation in an early clinical study is a prerequisite for enrollment in later studies. Based on these discussions, FDA has concluded that all trials involving patients with life-threatening diseases should, for purposes of this proposed rule, be considered to have therapeutic potential and that this proposal would apply to studies in any phase of a clinical investigation that enroll participants with a life-threatening disease.

In developing this proposal, FDA focused on four important factors: (1) FDA is committed to expanding access to and accelerating approval of new therapies for life-threatening diseases; (2) important ethical principles underlie the belief that neither gender should be excluded from early clinical trials involving a life-threatening disease because of their reproductive potential; (3) the mechanisms are in place, or are available, to protect individuals who participate in clinical trials from potential risks; and (4) FDA is committed to expanding the collection of gender-specific data on investigational therapies, especially for those populations who ultimately will be using the therapies. These four factors are discussed in detail in the following sections of this document.

A. Expanding Access and Accelerating Approval

FDA is committed to expanded patient access to potentially beneficial therapies for life-threatening and serious diseases, such as cancer and AIDS, through the IND process. Mechanisms for expanding access include treatment IND's (§§ 312.34 and 312.35), parallel track protocols (57 FR 13250, April 15, 1992), and other open-label protocols either for groups of patients or for one patient. Tens of thousands of patients have received promising pharmaceuticals under expanded access mechanisms.

In many cases, the risk-benefit assessment for investigational drugs for life-threatening or even serious diseases differs from that for investigational drugs for treating diseases not considered life-threatening or serious. In establishing procedures for the investigation of drugs for life-threatening diseases, FDA has recognized that physicians and patients are generally willing to accept greater risks or side effects from these medical products than they would accept from products that treat less serious diseases (53 FR 41516 at 41518, October 21, 1988).

FDA also is committed to expediting the approval of investigational drugs for treatment of life-threatening and serious diseases. The agency has issued regulations for the expedited development of new therapies intended to treat persons with life-threatening or severely debilitating diseases (subpart E of part 312 (21 CFR part 312) procedures in §§ 312.80 through 312.88), especially where no satisfactory alternative therapies exist. In addition, FDA has issued regulations for the accelerated approval of certain new drugs (subpart H of part 314 procedures in §§ 314.500 through 314.560) and biological products (subpart E of part 601 procedures in §§ 601.40 through 601.46) for serious or life-threatening diseases. For instance, accelerated approval can be based on a surrogate endpoint that reasonably suggests clinical benefit or on evidence of the drug's effect on a clinical endpoint other than survival or irreversible morbidity. On March 29, 1996, President Clinton announced a major initiative undertaken by FDA to make promising new therapies available sooner to American cancer patients with intractable or unresponsive malignancies. Under this initiative, FDA proposes, among other things, to shorten approval times for cancer treatments by recognizing that tumor shrinkage is often an early indication of a treatment's effectiveness and by basing approval of investigational drugs for refractory tumors on evidence of tumor shrinkage.

In view of the agency's commitment to provide expanded access to and accelerated approval of new therapies for life-threatening and serious diseases, this proposed rule is intended to ensure that women with reproductive potential who have a life-threatening disease are not excluded from volunteering for and being included in clinical investigational trials for drug products intended to treat their disease. Although a risk or potential risk of reproductive or developmental toxicity might exist, FDA recognizes that the potential benefits that may be accrued by these women from participation in a study for their disease may outweigh such risks and that the availability of certain safeguards can reduce these risks. (See section IV.C. of this document for a discussion regarding minimizing risks.)

B. Ethical Principles

In developing this proposal, FDA has carefully considered the evolution of thought within the agency and the scientific community and among the public regarding the participation of women in clinical trials and the related risks or potential risks. The agency also has considered the basic ethical principles that underlie clinical research. Current FDA and Department of Health and Human Services regulations related to informed consent and IRB's are based, in large part, on the three ethical principles relevant to human subject research discussed in the Report of the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research (the Belmont Report) (44 FR 23192, April 18, 1979). These principles include respect for persons, beneficence, and justice.

The principle of respect for persons usually is cited within the context of being certain that individuals are included in clinical research voluntarily after being fully informed. The principle recognizes the ability of autonomous individuals to make their own decisions about participating in clinical research.

The principle of beneficence requires that the risks associated with a clinical research activity be reasonable in the light of expected benefits. Beneficence also requires that the chance for benefits from participation be maximized, and the risk of possible harms be minimized, consistent with sound research design. In weighing risks and benefits, beneficence also recognizes the results of research as a potential benefit, so long as the rights of research participants are protected.

The principle of justice requires that the burdens and benefits of participation in clinical research be equitably distributed across the entire population in the place or region where the clinical research is conducted. In general, racial, ethnic, gender, and economic status should not be used as a basis for excluding participation in clinical research. Furthermore, persons who are eligible for participation in the

clinical research because of their disease or condition should be provided a reasonable opportunity to be included in the research until the research cohort is fully recruited.

An Institute of Medicine committee recently examined the issue of women in health research (Ref. 3). As part of their deliberations, they highlighted the ethical principle of justice and recommended that the scientific community and the institutions that support it ensure that scientific advances in medicine and public health fairly benefit all people, regardless of gender, race, ethnicity, or age. The committee concluded that clinical trials should be conducted consistent with the principle that medical research promotes the health and well-being of both women and men. This proposed rule would help achieve that goal by ensuring that women with a life-threatening disease are not denied the opportunity to contribute to the body of scientific knowledge about their disease and its manifestations in women.

The proposed rule is consistent with the three ethical principles in the Belmont Report and would help to ensure that women with reproductive potential who suffer from a life-threatening disease are no longer excluded from early clinical research.

C. Informed Consent and Other Mechanisms for Protecting People With a Life-Threatening Disease in Early Clinical Trials

A number of mechanisms are in place to protect participants in early clinical trials, including requirements for sound study design, the use of sound research procedures, and the proper use of the informed consent process. In addition to the sponsors, who have the responsibility of designing safe clinical trials, and the investigators, who carry them out, institutional review boards (IRB's) play an important role in ensuring participant safety in clinical trials. It is the responsibility of the involved IRB to determine that specific criteria for the protection of study participants are met before approving research subject to the IND regulations (§ 56.111(a) (21 CFR 56.111(a))). For example, the IRB must determine that risks to study participants are minimized by the use of procedures consistent with sound research design and that risks to study participants are reasonable in relation to anticipated benefits (§ 56.111(a)(1) and (a)(2)). The IRB also is responsible for ensuring that information given to study participants as part of the informed consent process is in accordance with FDA's regulations under part 50 (see § 56.111(a)(4)).

Elements of informed consent require that potential study participants be adequately informed that the study involves research (§ 50.25(a)(1)) and of any foreseeable risks or discomforts (§ 50.25(a)(2)). In addition, prospective study participants must be informed, when appropriate, of certain unforeseeable risks, including potential risks to the embryo or fetus, should a female study participant become pregnant (§ 50.25(b)(1)). As FDA noted in the 1993 guideline, if animal reproductive toxicity studies are complete, the results and an explanation of their significance in humans should be presented as part of the informed consent process (58 FR 39406 at 39411). If these studies are not complete, that fact should be communicated along with any other pertinent information, such as a general assessment of reproductive and fetal toxicity associated with other drugs that have related chemical structures or pharmacological effects. If no relevant information is available, the informed consent should explicitly state that fact and make clear that the potential exists for reproductive risks and/or developmental risks to a fetus. If needed, the IRB should require that a specific period of time lapse between when the potential study participants receive relevant information and when they must decide whether to participate in the study. If in the IRB's judgment, additional information to that required by § 50.25 would add meaningfully to the protection of the rights and welfare of study participants, the IRB may require the imparting of that information to the study participants (21 CFR 56.109(b)).

It is also the responsibility of the IRB to determine that the study is designed in such a way as to minimize the risk of fetal exposure to possibly harmful agents. Developmental toxicity has been linked to maternal exposure to certain drugs. Although a link between paternal drug exposure and developmental toxicity has not been conclusively established, results of some studies suggest that paternal exposure to certain drugs might be associated with developmental toxicity (Ref. 4). In particular, low-level, chronic genotoxic exposures that maintain fertility might lead to fetal developmental abnormalities, particularly when there is exposure of post-stem cell stages of spermatozoal development. Although the agency has not issued formal guidance on this issue, in such cases, it might be prudent to take precautions to prevent impregnation of women by men participating in such investigational studies.

The risk of fetal exposure can be eliminated by preventing pregnancy (except in those studies designed to test a drug's effect during pregnancy). The risk of fetal exposure also can be minimized by sponsors and IRB's, who can require the use of pregnancy testing to detect unsuspected pregnancy prior to initiation of study treatment or at intervals during the course of drug exposure. When the study design permits, sponsors can minimize potential developmental risks by short-term timing of studies to coincide with the early follicular phase of the menstrual cycle. Thus, in most of these short-term studies, the investigational agent would be eliminated from a woman's body prior to conception, should she inadvertently become pregnant. When the teratogenic effects of a drug are well established, the agency, sponsor, or IRB may require the use of contraception to prevent pregnancy in sexually active individuals of childbearing potential.

Women and men can eliminate the possibility of pregnancy through abstinence and reduce the possibility of pregnancy through the use of contraception for the duration of drug exposure (which may exceed the length of the study). In part because the cooperation of the individual's sexual partner may be needed to ensure that abstinence occurs, or that appropriate contraceptive methods are used, it is important for potential study participants to be provided with an opportunity to discuss their involvement in a clinical trial with their sexual partner prior to deciding whether to participate in the study.

The agency believes that, through the proper use of the informed consent process and the use of other study design mechanisms, risks to participants in early clinical trials can be reduced. When deciding whether to participate in a clinical trial for an investigational drug, potential participants should be able to weigh, in consultation with their spouse or partner, their health care provider, and their researcher, the potential risks of their participation.

D. Expanding the Collection of Gender-Specific Data

As noted previously, the need for gender specific data was the subject of guidances developed by the agency in 1988 and 1993 and was addressed in a proposed rule issued in 1995. Recently, medical and scientific issues related to gender analyses were the subject of an FDA-sponsored workshop on ''Gender Studies in Product Development:

Scientific Issues and Approaches'' held from November 6 to 7, 1995 (Ref. 5). Workshop participants, including representatives from industry, academia, government agencies, consumer groups, and patient communities, concluded that women should be included in all stages of drug development to fully characterize the safety and efficacy profile of the product. It was noted by numerous participants that use of gender-specific data from early trials may improve the efficiency of phase 3 trials by aiding in the interpretation of expected variations among gender groups.

In the 1993 guideline, FDA acknowledged that although drugs often behave similarly in demographic (age, gender, race) and other (concomitant disease, concomitant drugs) subsets of the population, there are many differences within such subsets, for example, in dose-response, in maximum size of effect, or in the risk of an adverse effect (58 FR 39406 at 39409). To identify such potential differences and to help refine labeling information, patient selection, and dose selection, the agency believes that it is important that those women who are likely to use an investigational agent once it is marketed be included in clinical investigations that may identify potential gender differences. In the case of HIV and AIDS, many of the women who are affected are young women with reproductive potential. Therefore, early participation by these women in clinical trials for such diseases will help ensure that needed gender-specific safety and effectiveness data are available for the women affected by the disease (Ref. 6).

V. Legal Authority

Section 505(i) (21 U.S.C. 355(i)) of the Federal Food, Drug, and Cosmetic Act (the act) confers broad authority upon the Secretary of Health and Human Services (the Secretary) (and by delegation to FDA) to issue regulations governing the clinical investigation of new drugs to protect the rights, safety, and welfare of human subjects (including through informed consent provisions) and otherwise to protect the public health. In addition, section 701 of the act (21 U.S.C. 371) provides that the Secretary has authority to issue regulations for the efficient enforcement of the act (including the drug-related provisions, such as the misbranding and approval provisions of sections 502 (21 U.S.C. 352) and 505 of the act.

The proposed amendment to the clinical hold regulations is intended to protect human subjects against being categorically excluded, based on reproductive potential, from the opportunity to participate in clinical trials investigating potentially beneficial treatments for a life-threatening disease. In addition, the proposed amendment would enhance public health protection by expanding opportunities to generate data concerning the safety and efficacy of investigational drugs for the treatment of life-threatening diseases.

The agency believes that prohibiting the exclusion of women with reproductive potential who have a life-threatening disease from clinical trials also is consistent with congressional efforts to prevent unwarranted discrimination against women. In the employment context, for example, the Civil Rights Act of 1964, as amended by the Pregnancy Discrimination Act (42 U.S.C. 2000e(k), 2000e–2(e)(1)) and as interpreted by the U.S. Supreme Court in the landmark case of *International Union, United Automobile, Aerospace and Agricultural Implement Workers, UAW* v. *Johnson Controls, Inc.*, 111 S.Ct. 1196 (1991), prohibits the exclusion of women with childbearing capacity from jobs they are qualified to perform solely because the working conditions of those jobs pose potential risks to exposed fetuses. Although the Court did not consider or hold that the Civil Rights Act applies to clinical drug trials, which are manifestly different in nature and purpose from private employment, FDA believes it is appropriate to consider the Court's opinion when developing policy on the eligibility of women with reproductive potential for participation in clinical trials for a life-threatening disease.

VI. Description of the Proposed Rule

Current § 312.42(b)(1) identifies the grounds for placing a clinical hold on proposed or ongoing phase 1 studies under an IND, and current § 312.42(b)(2) identifies the grounds for placing a clinical hold on proposed or ongoing phase 2 or phase 3 studies. FDA is proposing to amend §§ 312.42(b)(1) and (b)(2) to provide an additional ground for placing a phase 1, phase 2, or phase 3 study under an IND on clinical hold. Under proposed §§ 312.42(b)(1)(v) and (b)(2)(i), FDA may issue a clinical hold on any proposed or ongoing clinical trial for a life-threatening illness or disease that affects both genders if men or women with reproductive potential who have the disease being studied are excluded from eligibility in any phase of clinical investigation because of a risk or potential risk of reproductive toxicity (i.e., toxicity to reproductive organs) or developmental toxicity (i.e., toxicity to potential offspring) from use of the investigational drug. FDA believes that such risks would be outweighed by the potential benefits that may be accrued by participants in a study for the treatment of their disease and that fully informed potential participants should be able to make their own risk-benefit determination. FDA also believes that, in the case of developmental toxicity, potential risks can be minimized by the prevention of pregnancy through contraception or abstinence.

The clinical hold under proposed §§ 312.42(b)(1)(v) and (b)(2)(i) would not apply to clinical studies conducted: (1) Exclusively in healthy volunteers; (2) under special circumstances, such as studies of a single-gender population (e.g., studies evaluating the excretion of a drug in semen or its effects on menstrual function); or (3) in men, as long as a study that does not exclude subjects with reproductive potential has been planned or is being conducted in women.

The phrase ''women with reproductive potential'' as used in the proposed rule does not include pregnant women. The proposed rule also would not impose requirements to enroll or recruit a specific number of men or women with reproductive potential.

As is true for clinical holds on any basis, FDA ordinarily would issue a clinical hold only after attempts to convince the sponsor to remove an exclusion had failed (§ 312.42(c)).

Under proposed § 312.42(b)(1)(v), ''life-threatening illnesses or diseases'' are defined as ''diseases or conditions where the likelihood of death is high unless the course of the disease is interrupted.'' The proposed definition is consistent with the definition of ''life-threatening'' in the IND regulations governing drugs intended to treat life-threatening illnesses (21 CFR 312.81(a)(1)).

The proposed definition of life-threatening illnesses or diseases is intended to include those fatal diseases where death itself may not be imminent, but where treatment is necessary to prevent premature death. For example, an anti-retroviral drug might be found, on the basis of phase 2 studies, to delay progression from the asymptomatic state to the symptomatic state and then to AIDS when used early after infection with HIV. Although this progression ordinarily would take more than 12 months to occur in most patients, this condition would be within the definition of life-threatening. Other examples of life-threatening illnesses include cancer, certain cardiac arrhythmias, intracranial hemorrhage, or amyotrophic lateral sclerosis.

The exclusion of subjects with reproductive potential addressed by this proposed rule not only includes explicit

exclusion but also de facto exclusion. For example, a de facto exclusion might result from setting study entry criteria that require sterilization and would have the effect of precluding enrollment of participants with reproductive potential. De facto exclusions also might result from setting criteria that are inherently difficult for subjects to meet, such as weight, or other physical requirements that generally differ between women and men.

VII. Environmental Impact

The agency has determined under 21 CFR 25.30(h) that this action is of a type that does not individually or cumulatively have a significant effect on the human environment. Therefore, neither an environmental assessment nor an environmental impact statement is required.

VIII. Paperwork Reduction Act of 1995

This proposed rule does not contain any information collection provisions that would be subject to review by the Office of Management and Budget (OMB) under the Paperwork Reduction Act of 1995 (44 U.S.C. 3501–3520).

IX. Analysis of Impacts

FDA has examined the impacts of the proposed rule under Executive Order 12866 and the Regulatory Flexibility Act (5 U.S.C. 601–612). Executive Order 12866 directs agencies to assess all costs and benefits of available regulatory alternatives and, when regulation is necessary, to select regulatory approaches that maximize net benefits (including potential economic, environmental, public health and safety, and other advantages; distributive impacts; and equity). The Regulatory Flexibility Act requires agencies to analyze regulatory options if the proposed rule is expected to have a significant impact on a substantial number of small entities.

The Unfunded Mandates Reform Act (Pub. L. 104–4) requires that agencies prepare an assessment of anticipated costs and benefits before proposing any rule that may result in an annual expenditure by State, local, and tribal governments, in the aggregate, or by the private sector, of $100,000,000 or more (adjusted annually for inflation). This proposed rule does not impose any mandates on State, local, or tribal governments, or the private sector that will result in an annual expenditure of $100,000,000 or more. The data for the impacts analysis were developed by FDA's Economics Staff, Office of Management and Systems, Office of Planning and Evaluation, and their full report is on file at the Dockets Management Branch (address above).

A. Costs

Implementation of this proposed rule could impart additional direct costs to the industry in one area—the cost associated with testing for pregnancy in women with reproductive potential who volunteer to participate in clinical trials that would have previously excluded them.

As fully described in its detailed study (Ref. 7), FDA estimated the direct cost in the following manner. Using an FDA protocol database, the agency estimated the number of clinical trials for drug products for life-threatening diseases from which women with reproductive potential are being excluded. The agency then determined the total number of subjects recruited for those clinical trials. Using published information, the agency estimated the relative incidence among women with reproductive potential for the specific life-threatening diseases compared to the incidence in the general population. Using the estimates of relative incidence among women with reproductive potential for the specific disease, it was estimated how many women would be participating in clinical trials for the specific disease, were they not being excluded. Finally, using the approximate length of each phase of clinical trials (phases 1, 2, and 3), the agency calculated the number of pregnancy tests that would be necessary to test for pregnancy in this volunteering population subset.

FDA conducted its analysis using data extracted from the majority of the clinical trial protocols submitted to four review divisions in the Center for Drug Evaluation and Research (CDER) during a 20-month period between August 1, 1993, and March 31, 1995: Cardio-Renal; Anti-Viral; Medical Imaging, Surgical and Dental; and the former Pilot Drug Evaluation. The protocol data base includes information on the phase of the studies (whether they are phase 1, 2, or 3), the planned size of the trials, and the indications for which the therapies are being studied. Data from this data base were analyzed to estimate how many protocols were submitted to these four FDA divisions involving life-threatening illnesses that excluded women with reproductive potential. Forty-three protocols involving life-threatening illnesses and excluding women with reproductive potential were identified as having been submitted to FDA during this 20-month period.

Projecting the number of submissions from the four review divisions across the entire agency required additional analysis because it could not be assumed that all review divisions receive protocols for life-threatening diseases at the same rate. To adjust for the difference from division to division, the agency calculated the number of NDA approvals that were granted in each division for drugs to treat life-threatening and severely debilitating illnesses under the accelerated approval procedures of subpart E of part 312. Using the results of this analysis and the annualized numbers from the four analyzed review divisions, it was possible to calculate approximately how many protocols for life-threatening diseases that exclude women are submitted to individual review divisions each year. It was projected that approximately 62 protocols are submitted to FDA per year for life-threatening diseases that exclude women with reproductive potential.

Next it was assumed that, once they are no longer excluded, women with reproductive potential would enter clinical trials in proportion to the relative incidence of the disease occurrence in that population at diagnosis. Using published data on the relative incidence among women with reproductive potential at diagnosis of AIDS, HIV, and coronary heart disease and the number of protocols submitted to the four divisions projected across the entire agency and annualized, the agency estimated how many women (ages 13 to 49 years) are excluded per year from phase 1, phase 2, and phase 3 clinical studies in the United States. The results showed that approximately 90 women with reproductive potential are excluded from phase 1 studies, 266 from phase 2 studies, and 40 from phase 3 studies annually in the United States.

If one assumes further that phase 1 studies last approximately 2 weeks, phase 2 studies approximately 3 months, and phase 3 studies about a year, the costs for pregnancy testing can be assessed. During phase 1 studies, approximately 1 pregnancy test would be required for each woman with reproductive potential entering the study; during phase 2 studies, approximately 3 tests would be required; and, during phase 3 studies, approximately 12 tests would be required. At a cost of $30 per test, the annual cost to industry is estimated to be at most about $41,000. This estimate is summarized in Table 1.

TABLE 1.—ESTIMATED ANNUAL COSTS OF TESTING FOR PREGNANCY IN WOMEN WITH REPRODUCTIVE POTENTIAL IN U.S. CLINICAL TRIALS FOR THERAPIES FOR LIFE-THREATENING ILLNESSES

Study Phase	Tests Required per Woman	Estimated Number of Women Annually	Cost per Test	Annual Costs
1	1	90	$30	$2,700
2	3	266	$30	$23,940
3	12	40	$30	$14,400
Totals		396		$41,040

The largest cost encountered in the 43 analyzed protocols was a phase 2 trial from which an estimated 45 women with reproductive potential were excluded. The cost of pregnancy testing for this trial, if women with reproductive potential had been included, would have been about $4,050. Of the 43 protocols analyzed, 6 had estimated costs of pregnancy testing exceeding $1,000.

The agency is aware of industry's concerns about the liability exposure associated with the inclusion of women with reproductive potential in clinical trials, particularly prior to completion of animal reproductive studies. FDA believes, however, that the inclusion in investigational studies of women with reproductive potential who have a life-threatening disease and who have given informed consent is not likely to lead to increased liability. Informed consent means that a study participant has agreed to participate despite recognition and appreciation of known or potential risks, an agreement that should minimize the legal risks associated with drug development. Careful use of study design and informed consent is likely to minimize exposure to liability (Refs. 8 and 9). There is, of course, no way to guarantee this, but there have been few instances of liability assessed against drug manufacturers for the conduct of clinical trials.

As already stated, if a deficiency exists in a clinical investigation that may be grounds for the imposition of a clinical hold, FDA will generally attempt to discuss and satisfactorily resolve the matter with the sponsor before issuing the clinical hold order (§ 312.42(c)). An IND would be placed on clinical hold for specifically excluding women with reproductive potential only as a last resort. Only for those few protocols could there be an increase in cost, due primarily to a delay in starting the clinical trials.

The agency believes that the societal benefits more than outweigh the potential minimal additional costs because a considerable patient population (women with reproductive potential who have a life-threatening disease) could receive a potentially beneficial new therapy.

B. Small Entities

The protocol analysis identified protocols sponsored by small businesses. The largest additional pregnancy testing cost incurred by a small business in the reviewed protocols under the proposed rule was $990. Projected across all CDER/CBER review divisions and annualized, we expect no more than nine protocol submissions per year from small businesses that might incur additional costs under the proposed rule. Few small firms are likely to be affected in any given year and most of these would incur no significant additional costs. Therefore, under the Regulatory Flexibility Act, the Commissioner of Food and Drugs certifies that this rule will not have a significant effect on a substantial number of small entities.

X. Request for Comments

Interested persons may, on or before December 23, 1997, submit to the Dockets Management Branch (address above) written comments regarding this proposal. Two copies of any comments are to be submitted, except that individuals may submit one copy. Comments are to be identified with the docket number found in brackets in the heading of this document. Received comments may be seen in the office above between 9 a.m. and 4 p.m., Monday through Friday.

XI. References

Copies of the following references have been placed on display in the Dockets Management Branch (address above) and may be seen by interested persons between 9 a.m. and 4 p.m., Monday through Friday.

1. McGovern, T., ''Proposal to Eliminate Obstacles Facing Women in the Drug Development Process: A Recommendation to the National Task Force on AIDS Drug Development,'' HIV Law Project of the AIDS Service Center, June 30, 1994.

2. Transcript of the meeting of the National Task Force on AIDS Drug Development, October 28, 1994 (see discussion on pp. 25 to 70).

3. Mastroianni, A. C., R. Faden, and D. Federman, editors, *Women and Health Research: Ethical and Legal Issues of Including Women in Clinical Studies*, Vol. 1, National Academy Press, Washington, pp. 75–83, 1994.

4. DeLap, R. J., J. L. Fourcroy, and G. A. Fleming, ''Fetal Harm Due to Paternal Drug Exposure: A Potential Issue in Drug Development,'' *Drug Information Journal*, 30:359–364, 1996.

5. Transcript of the FDA workshop ''Gender Studies in Product Development: Scientific Issues and Approaches,'' November 6–7, 1995.

6. Sherman, L. A., R. Temple, and R. B. Merkatz, ''Women in Clinical Trials: An FDA Perspective,'' *Science*, 269:793–795, 1995.

7. Food and Drug Administration, Office of Management and Systems, Office of Planning and Evaluation, *Impacts of Not Excluding Women with Reproductive Potential Who Have Life-threatening Illnesses from Clinical Trials*, January 10, 1997.

8. Flannery, E., and S. N. Greenberg, ''Liability Exposure for Exclusion and Inclusion of Women as Subjects in Clinical Studies,'' in *Women and Health Research: Ethical and Legal Issues of Including Women in Clinical Studies*, Vol. 2, edited by A. C. Mastroianni, R. Faden, and D. Federman, National Academy Press, Washington, pp. 96–97, 1994.

9. Clayton, E. W., ''Liability Exposure When Offspring Are Injured Because of Their Parents' Participation in Clinical Trials,'' in *Women and Health Research: Ethical and Legal Issues of Including Women in Clinical Studies*, Vol. 2, edited by A. C. Mastroianni, R. Faden, and D. Federman, National Academy Press, Washington, pp. 108–109, 1994.

List of Subjects in 21 CFR Part 312

Drugs, Exports, Imports, Investigations, Labeling, Medical research, Reporting and recordkeeping requirements, Safety.

Therefore, under the Federal Food, Drug, and Cosmetic Act, the Public Health Service Act, and under authority delegated to the Commissioner of Food and Drugs, it is proposed that 21 CFR part 312 be amended as follows:

PART 312—INVESTIGATIONAL NEW DRUG APPLICATION

1. The authority citation for 21 CFR part 312 continues to read as follows:

Authority: Secs. 201, 301, 501, 502, 503, 505, 506, 507, 701 of the Federal Food, Drug,

and Cosmetic Act (21 U.S.C. 321, 331, 351, 352, 353, 355, 356, 357, 371); sec. 351 of the Public Health Service Act (42 U.S.C. 262).

2. Section 312.42 is amended by adding new paragraph (b)(1)(v) and by revising paragraph (b)(2)(i) to read as follows:

§ 312.42 Clinical holds and requests for modification.

* * * * *

(b) * * *

(1) * * *

(v) The IND is for the study of an investigational drug intended to treat a life-threatening illness or disease that affects both genders, and men or women with reproductive potential who have the disease being studied are excluded from eligibility in any phase of clinical investigation because of a risk or potential risk of reproductive (i.e., toxicities to reproductive organs) or developmental (i.e., toxicities to potential offspring) toxicity from use of the investigational drug. The phrase ''women with reproductive potential'' does not include pregnant women. For purposes of this paragraph, ''life-threatening illnesses or diseases'' are defined as ''diseases or conditions where the likelihood of death is high unless the course of the disease is interrupted.'' The clinical hold would not apply under this paragraph to clinical studies conducted:

(A) Under special circumstances, such as studies of a single-gender population (e.g., studies evaluating the excretion of a drug in semen or the effects on menstrual function); or

(B) In men, as long as a study that does not exclude subjects with reproductive potential has been planned or is being conducted in women.

(2) * * *

(i) Any of the conditions in paragraphs (b)(1)(i) through (b)(1)(v) of this section apply; or

* * * * *

Dated: September 16, 1997.

Michael A. Friedman,

Lead Deputy Commissioner for the Food and Drug Administration.

Donna E. Shalala,

Secretary of Health and Human Services.

[FR Doc. 97–25268 Filed 9-23-97; 8:45 am]

BILLING CODE 4160–01–F

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

RIN 1018–AE30

Endangered and Threatened Wildlife and Plants; Public Hearing and Extension of Comment Period on Proposed Endangered Status for Keck's Checker-Mallow

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule; notice of public hearing and extension of comment period.

SUMMARY: The Fish and Wildlife Service (Service), pursuant to the Endangered Species Act of 1973, as amended (Act), provides notice of a public hearing and extension of the comment period on the proposed endangered status for *Sidalcea keckii* (Keck's checker-mallow). The comment period is extended to accommodate a public hearing that was requested by California Assemblyman Roy Ashburn, Thirty-Second District.

DATES: The public hearing will be held on Tuesday, October 21, from 6:00 p.m. to 8:00 p.m. in Visalia, California. The comment period closes November 10, 1997.

ADDRESSES: The public hearing will be held at the Visalia Convention Center, 303 East Acequia Street, Visalia, California. Comments and materials concerning this proposal should be sent to the Field Supervisor, U.S. Fish and Wildlife Service, Sacramento Fish and Wildlife Office, 3310 El Camino Avenue, Suite 130, Sacramento, California 95821–6340. Comments and materials received will be available for public inspection, by appointment, during normal business hours at the above address.

FOR FURTHER INFORMATION CONTACT: Ken Fuller of the Sacramento Fish and Wildlife Office (see **ADDRESSES** section) at (916) 979–2120.

SUPPLEMENTARY INFORMATION:

Background

On July 28, 1997, the Service published a rule proposing endangered status for *Sidalcea keckii* in the **Federal Register** (62 FR 40325). The original comment period was to close on September 26, 1997. Section 4(b)(5)(E) of the Act (16 U.S.C. 1531 *et seq.*) requires that a public hearing be held if it is requested within 45 days of the publication of the proposed rule. In response to a request for a public hearing from California Assemblyman Roy Ashburn, a public hearing will be held in Visalia, California on October 21, 1997, at the Visalia Convention Center. Parties wishing to make statements for the record should bring a copy of their statements to the hearing. Oral statements may be limited in length, if the number of parties present at the hearing necessitates such a limitation. There are no limits to the length of written comments or materials presented at the hearing or mailed to the Service. Written comments carry the same weight as oral comments. The comments period now closes on November 10, 1997. Written comments should be submitted to the Service in the **ADDRESSES** section.

Sidalcea keckii is an annual plant that is known from one population in the hilly annual grasslands of south-central Tulare County. The plant is threatened by agricultural land conversion, urban development, and naturally occurring events. Comments from the public regarding the accuracy of this proposed rule are sought, especially regarding:

(1) Biological, commercial trade, or other relevant data concerning any threat (or lack thereof) to the species listed above;

(2) The location of any additional populations of the species and the reasons why any habitat should or should not be determined to be critical habitat as provided by section 4 of the Act;

(3) Additional information concerning the range, distribution, and population sizes of the species; and

(4) Current or planned activities in the subject area and their possible impacts on the species.

Author

The primary author of this notice is Ken Fuller (see **ADDRESSES** section).

Authority

The authority for this action is the Endangered Species Act of 1973 (16 U.S.C. 1531 *et seq.*).

Dated: September 16, 1997.

Cynthia Barry,

Acting Regional Director, Region 1, Portland, Oregon.

[FR Doc. 97–25061 Filed 9–23–97; 8:45 am]

BILLING CODE 4310–55–P

Notices

Federal Register

Vol. 62, No. 185

Wednesday, September 24, 1997

This section of the FEDERAL REGISTER contains documents other than rules or proposed rules that are applicable to the public. Notices of hearings and investigations, committee meetings, agency decisions and rulings, delegations of authority, filing of petitions and applications and agency statements of organization and functions are examples of documents appearing in this section.

DEPARTMENT OF AGRICULTURE

Agricultural Marketing Service

[Docket No. DA–97–10]

Request for Extension and Revision of a Currently Approved Information Collection

AGENCY: Agricultural Marketing Service, USDA.

ACTION: Proposed collection, comments requested.

SUMMARY: In accordance with the Paperwork Reduction Act of 1995 (44 U.S.C. Chapter 35), this notice announces the Agricultural Marketing Service's (AMS) intention to request an extension for and revision to a currently approved information collection for Reporting Requirements Under Regulations Governing Inspection and Grading Services of Manufactured or Processed Products.

DATES: Comments on this notice must be received by November 24, 1997 to be assured of consideration.

ADDITIONAL INFORMATION OR COMMENTS: Contact Lynn G. Boerger, USDA/AMS/Dairy Division, Dairy Grading Branch, Room 2750–South Building, P.O. Box 96456, Washington, D.C. 20090–6456; Tel: (202) 720–9381, Fax: (202) 720–2643.

SUPPLEMENTARY INFORMATION:

Title: Reporting Requirements Under Regulations Governing Inspection and Grading Services of Manufactured or Processed Products.

OMB Number: 0581–0126.

Expiration Date of Approval: March 31, 1998.

Type of Request: Extension and revision of a currently approved information collection.

Abstract: The dairy grading program is a voluntary user fee program. In order for a voluntary inspection program to perform satisfactorily with a minimum of confusion, there must be written requirements and rules for both Government and industry. The information collections are essential to carry out and administer the inspection and grading program. The information requested is used to identify the product offered for grading, to identify and contact the party responsible for payment of the grading fee and expense, and to identify persons who are responsible for administering the program.

Estimate of Burden: Public reporting burden for this collection of information is estimated to average .048 hours per response.

Respondents: Distributors, manufacturers and packagers of butter and cheese.

Estimated Number of Respondents: 319.

Estimated Number of Responses per Respondent: 3.97.

Estimated Total Annual Burden on Respondents: 383 hours.

Comments are invited on: (1) Whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information will have practical utility; (2) the accuracy of the agency's estimate of the burden of the proposed collection of information including the validity of the methodology and assumptions used; (3) ways to enhance the quality, utility, and clarity of the information to be collected; and (4) ways to minimize the burden of the collection of information on those who are to respond, including the use of appropriate automated, electronic, mechanical, or other technological collection techniques or other forms of information technology. Comments should reference OMB No. 0581–0126 and the Dairy Inspection and Grading Program and be sent to the Office of the Director, USDA/AMS/Dairy Division, Room 2968–S, P.O. Box 96456, Washington, D.C. 20090–6456. Comments should reference the docket number and the date and page number of this issue of the **Federal Register**. All comments received will be available for public inspection during regular business hours at 14th and Independence Ave. S.W., Washington, D.C., Room 2968 South Building.

All responses to this notice will be summarized and included in the request for OMB approval. All comments will become a matter of public record.

Dated: September 17, 1997.

Richard M. McKee,

Director, Dairy Division.

[FR Doc. 97–25276 Filed 9–23–97; 8:45 am]

BILLING CODE 3410–02–P

DEPARTMENT OF AGRICULTURE

Agricultural Marketing Service

[Docket No. PY–97–008]

Pasteurized Shell Eggs (Pasteurized In-shell Eggs)

AGENCY: Agricultural Marketing Service, USDA.

ACTION: Notice and request for comments.

SUMMARY: The purpose of this notice is to inform interested persons that the Agricultural Marketing Service (AMS) intends to approve the official identification of pasteurized shell eggs (in-shell eggs) on a tentative basis. Such shell eggs will be required to be subjected to a pasteurization process deemed acceptable to the Food and Drug Administration (FDA). Additionally, AMS advises all interested parties that it will not develop grade standards for pasteurized shell eggs at this time.

DATES: This tentative approval period begins September 24, 1997 and extends until AMS makes a final determination regarding the official identification of pasteurized shell eggs. Comments should be submitted on or before November 24, 1997.

ADDRESSES: Written comments may be sent to Douglas C. Bailey, Chief, Standardization Branch, Poultry Division, Agricultural Marketing Service, U.S. Department of Agriculture, Stop 0259, 1400 Independence Avenue, SW, Washington, DC 20250–0259. Comments may be inspected at this location between 8 a.m. and 4:00 p.m., Eastern time, Monday through Friday, except holidays. State that your comments refer to Docket No. PY–97–008.

COMMENTS: Commenters are invited to provide specific information during the comment period on the Agency's tentative approval to officially identify pasteurized shell eggs.

FOR FURTHER INFORMATION CONTACT: Rex A. Barnes, Chief, Grading Branch, Poultry Division, 202–720–3271.

SUPPLEMENTARY INFORMATION:

Background

The Agricultural Marketing Act of 1946, as amended (AMA) (7 U.S.C. 1621 *et seq.*), authorizes the Secretary of Agriculture to set standards for agricultural products and, on a voluntary basis, inspect and certify conformity of agricultural products to such standards to assist in their orderly marketing.

The voluntary shell egg grading program (7 CFR Part 56) administered under the AMA provides that any interested party may make an application with USDA to determine the class, quality, quantity, condition, of shell eggs.

Moreover, USDA may authorize the applicant to officially identify such commodities after they have been graded by a representative of the Secretary and meet the requirements of the authorizing regulations, standards, or specifications.

Grade Standards

On June 18, 1996, the Agricultural Marketing Service (AMS) published a notice in the **Federal Register** (61 FR 30851) advising interested persons that grade standards currently applicable to shell eggs are not appropriate for pasteurized shell eggs. The notice also solicited comments on the need for USDA grade standards for pasteurized shell eggs. AMS received 5 comments during the comment period. Two commenters were not in favor of grade standards for pasteurized shell eggs and 3 commenters addressed issues that were outside the scope of the notice. AMS reviewed this issue and does not plan to develop grade standards for pasteurized shell eggs at this time.

Tentative Official Identification of Pasteurized Shell Eggs

AMS has been requested to permit the official identification of pasteurized shell eggs (in-shell eggs). Pasteurized shell eggs are shell eggs of the domesticated chicken which have been subjected to a process to destroy harmful viable microorganisms. Such processes shall meet the criterion for pasteurization set forth by FDA.

Since FDA is responsible for the definitions and standards or descriptions of foods such as eggs, shell egg processors must first receive FDA authorization to use the term ''pasteurized'' in conjunction with its shell egg labels. All such labeling must also comply with the Federal Food, Drug and Cosmetic Act; Fair Packaging and Labeling Act; and Nutrition Labeling and Education Act; and their associated regulations.

The FDA criterion for pasteurization is a 5 log reduction in Salmonella count after introducing a mixture of Salmonella organisms containing *Salmonella enteritidis* into the intact egg. Processors must demonstrate the effectiveness of their pasteurization process by obtaining and providing FDA data which show that their process resulted in the required reduction in Salmonella count. An evaluation of the pasteurization process will include not only a review of the time/temperature data necessary to achieve a 5 log reduction in Salmonella count, but will also include an evaluation of survival and growth of bacteria from eggs held for 30 days at 41 °F after pasteurization. Additionally, processors will also be required to demonstrate that product integrity can be ensured after pasteurization. This may be done by the marking and/or packaging of the pasteurized eggs to ensure that unpasteurized eggs are not substituted in the containers after processing.

After processors have submitted appropriate data acceptable to FDA for use of the term ''pasteurized,'' AMS will consider their requests to permit official identification of the pasteurized shell eggs.

Processors would be authorized to state that USDA certifies the shell eggs as pasteurized when a representative of the Secretary monitors the pasteurization process to ensure it is conducted in accordance with appropriate requirements. Additionally, processors would be authorized to officially identify pasteurized shell eggs with a shield-shaped certified as pasteurized symbol if the eggs certified as pasteurized were produced from eggs which had been officially graded and identified as U.S. Consumer Grade A or Grade AA. An official identification symbol that does not include the shield could also be developed to identify ungraded pasteurized shell eggs if there is sufficient interest in the use of such a symbol.

AMS recognizes that appropriate investigation is needed before amending current regulations to establish an authority for a new official identification. As part of this investigation, AMS is tentatively authorizing the official identification of pasteurized shell eggs to determine industry and consumer acceptance of such a practice, and to permit the collection of other necessary data. Current regulations (7 CFR 56.3) provide AMS the flexibility needed to permit such experimentation. After AMS has evaluated the results of the tentative authorization of official identification for pasteurized shell eggs, it will determine if the current shell egg grading regulations should be amended, through notice and comment rulemaking, to include authorization to identify shell eggs as certified as pasteurized.

Tentative Requirements for Official Identification of Pasteurized Shell Eggs

Identifying and Marking Products.

Use of USDA Certified as Pasteurized Statement.

1. During the tentative approval period, processors may state on labels, containers, or packaging material that USDA certifies shell eggs as pasteurized in accordance with the following requirements:

a. Acceptance of the efficacy of the pasteurization process by FDA.

b. Use of a grader to monitor the pasteurization process to ensure it is conducted in accordance with prescribed parameters.

Use of USDA Certified as Pasteurized Official Identification Symbol.

2. During the tentative approval period, processors may use the USDA official symbol certifying shell eggs as pasteurized on labels, containers, or packaging material in accordance with the following requirements:

a. Acceptance of the efficacy of the pasteurization process by FDA.

b. Use of a grader to monitor the pasteurization process to ensure it is conducted in accordance with prescribed parameters.

c. Use of eggs officially graded and identified as U.S. Consumer Grade A or Grade AA to produce pasteurized shell eggs.

Design of Certified as Pasteurized Official Identification Symbol for Graded Eggs.

3. Except as otherwise authorized, the shield set forth in Figure 1 containing the letters ''USDA'' shall be the official identification symbol to identify cartons of shell eggs which are officially graded and pasteurized. The shield shall be of sufficient size so that the print and other information contained therein is distinctly legible and in approximately the same proportion as shown in Figure 1.

BILLING CODE 3410–02–P

Figure 1

BILLING CODE 3410–02–C

Authority: 7 U.S.C. 1621 *et seq.*

Dated: September 18, 1997.

Lon Hatamiya,

Administrator, Agricultural Marketing Service.

[FR Doc. 97–25277 Filed 9–23–97; 8:45 am]

BILLING CODE 3410–02–P

DEPARTMENT OF AGRICULTURE

Animal and Plant Health Inspection Service

[Docket No. 97–083–1]

Notice of Request for Extension of Approval of an Information Collection

AGENCY: Animal and Plant Health Inspection Service, USDA.

ACTION: Extension of approval of an information collection; comment request.

SUMMARY: In accordance with the Paperwork Reduction Act of 1995, this notice announces the Animal and Plant Health Inspection Service's intention to request an extension of approval of an information collection in support of regulations to prevent the introduction of exotic Newcastle disease in birds and poultry and chlamydiosis in poultry.

DATES: Comments on this notice must be received by November 24, 1997 to be assured of consideration.

ADDRESSES: Send comments regarding the accuracy of burden estimate, ways to minimize the burden (such as through the use of automated collection techniques or other forms of information technology), or any other aspect of this collection of information to: Docket No. 97–083–1, Regulatory Analysis and Development, PPD, APHIS, suite 3C03, 4700 River Road Unit 118, Riverdale, MD 20737–1238. Please send an original and three copies, and state that your comments refer to Docket 97–083–1. Comments received may be inspected at USDA, room 1141, South Building, 14th Street and Independence Avenue SW., Washington, DC, between 8 a.m. and 4:30 p.m., Monday through Friday, except holidays. Persons wishing to inspect comments are requested to call ahead on (202) 690–2817 to facilitate entry into the comment reading room.

FOR FURTHER INFORMATION CONTACT: For information regarding exotic Newcastle disease in birds and poultry and chlamydiosis in poultry, contact Dr. Karen James, Senior Staff Veterinarian, Emergency Programs, VS, APHIS, 4700 River Road Unit 41, Riverdale, MD 20737–1231, (301) 734–8240, or e-mail kjames@aphis.usda.gov. For copies of more detailed information on the information collection, contact Ms. Cheryl Jenkins, Information Collection Coordinator, at (301) 734–5360.

SUPPLEMENTARY INFORMATION:

Title: Exotic Newcastle Disease in Birds & Poultry; Chlamydiosis in Poultry.

OMB Number: 0579–0116.

Expiration Date of Approval: April 30, 1998.

Type of Request: Extension of approval of an information collection.

Abstract: The Animal and Plant Health Inspection Service (APHIS) of the U.S. Department of Agriculture is responsible for preventing the spread of contagious, infectious, or communicable diseases of animals and poultry from one State to another, and for eradicating such diseases from the United States when feasible.

In connection with this mission, APHIS regulates the interstate movement of certain poultry, birds, and other items from premises and areas quarantined because of exotic Newcastle disease or chlamydiosis. These regulations enable us to prevent infected or exposed birds from coming into contact with healthy ones.

Regulating the interstate movement of birds, poultry, and other items (such as eggs, carcasses, vehicles, containers, and coops) requires the use of certain information gathering activities, including the completion of documents attesting to the health of the birds or poultry being moved, the number and types of birds or poultry being moved in a particular shipment, the shipment's point of origin, the shipment's destination, and the reason for the interstate movement.

These documents also provide useful ''traceback'' information in the event that poultry or birds are infected and an investigation must be launched to determine where the birds or poultry originated.

The information provided by these documents is critical to our ability to prevent the interstate spread of exotic Newcastle disease and chlamydiosis, which are highly contagious and capable of causing significant economic harm to the U.S. poultry industry.

We are asking the Office of Management and Budget (OMB) to approve the continued use of this information collection activity.

The purpose of this notice is to solicit comments from the public (as well as affected agencies) concerning our information collection. We need this outside input to help us:

(1) Evaluate whether the proposed collection of information is necessary for the proper performance of the functions of the Agency, including whether the information will have practical utility;

(2) Evaluate the accuracy of our estimate of the burden of the proposed collection of information, including the validity of the methodology and assumptions used;

(3) Enhance the quality, utility, and clarity of the information to be collected; and

(4) Minimize the burden of the collection of information on those who are to respond, through use, as appropriate, of automated, electronic, mechanical, and other collection technologies, e.g., permitting electronic submission of responses.

Estimate of burden: The public reporting burden for this collection of information is estimated to average .46 hours per response.

Respondents: U.S. producers and shippers, State animal protection authorities.

Estimated number of respondents: 45.

Estimated number of responses per respondent: 1.

Estimated annual number of responses: 45.

Estimated total annual burden on respondents: 21 hours. (Due to rounding, the total annual burden hours may not equal the product of the annual number of responses multiplied by the average reporting burden per respondent.)

All responses to this notice will be summarized and included in the request for OMB approval. All comments will also become a matter of public record.

Done in Washington, DC, this 18th day of September 1997.

Craig A. Reed,

Acting Administrator, Animal and Plant Health Inspection Service.

[FR Doc. 97–25326 Filed 9–23–97; 8:45 am]

BILLING CODE 3410–34–P

DEPARTMENT OF AGRICULTURE

Animal and Plant Health Inspection Service

[Docket No. 97–078–1]

Notice of Request for Extension of Approval of an Information Collection

AGENCY: Animal and Plant Health Inspection Service, USDA.

ACTION: Extension of approval of an information collection; comment request.

SUMMARY: In accordance with the Paperwork Reduction Act of 1995, this notice announces the Animal and Plant Health Inspection Service's intention to request an extension of approval of an information collection in support of the State-Federal Brucellosis Eradication Program.

DATES: Comments on this notice must be received by November 24, 1997 to be assured of consideration.

ADDRESSES: Send comments regarding the accuracy of burden estimate, ways to minimize the burden (such as through the use of automated collection techniques or other forms of information technology), or any other aspect of this collection of information to: Docket No. 97–078–1, Regulatory Analysis and Development, PPD, APHIS, suite 3C03, 4700 River Road Unit 118, Riverdale, MD 20737–1238. Please send an original and three copies, and state that your comments refer to Docket 97–078–1. Comments received may be inspected at USDA, room 1141, South Building, 14th Street and Independence Avenue SW., Washington, DC, between 8 a.m. and 4:30 p.m., Monday through Friday, except holidays. Persons wishing to inspect comments are requested to call ahead on (202) 690–2817 to facilitate entry into the comment reading room.

FOR FURTHER INFORMATION: For information regarding the State-Federal Brucellosis Eradication Program, contact Dr. James Davis, Senior Staff Veterinarian, National Animal Health Programs, VS, APHIS, Suite 3B08, 4700 River Road Unit 43, Riverdale, MD 20737–1236, (301) 734–5970. For copies of more detailed information on the information collection, contact Ms. Celeste Sickles, Agency Support Service Specialist, at (301) 734–7477.

SUPPLEMENTARY INFORMATION:

Title: State-Federal Brucellosis Eradication Program.

OMB Number: 0579–0047.

Expiration Date of Approval: January 31, 1998.

Type of Request: Extension of approval of an information collection.

Abstract: The State-Federal Brucellosis Eradication Program is a national program to eliminate this serious disease of livestock. Brucellosis also affects humans through contacts with infected animals or their byproducts. The program is conducted under the various States' authorities, and by Federal authorities regulating interstate movement of affected animals.

Uniform program standards (Brucellosis Eradication Recommended Uniform Methods and Rules) are developed by organizations representing the livestock industry, State animal health agencies, and the U.S. Department of Agriculture (USDA). Recommendations affecting the program standards are submitted by the executive committee of the U.S. Animal Health Association for consideration and approval by USDA. If the recommendations are accepted as part of the program standards, the Brucellosis Eradication Recommended Uniform Methods and Rules (UMR) are amended to incorporate the change.

The UMR forms the basis for the program in each State. The UMR states, in part, that a ''concerted effort through effective screening programs and extensive epidemiologic investigations to locate infection and to eradicate the disease is required.'' A national epidemiology form is needed to fulfill an individual State's commitment to report and review epidemiologic data.

The information for report forms is obtained from State veterinarians, livestock inspectors, and herd owners. The information obtained is used to continue the search for other infected herds, maintain identification of livestock, monitor deficiencies in identification of animals for movement, and monitor program deficiencies in suspicious and infected herds. This information is used to determine brucellosis area status and aids herd owners by speeding up the detection and elimination of serious disease conditions in their herds.

In most instances, information is collected at the time of testing, herd tagging, or branding of infected animals.

We are asking the Office of Management and Budget (OMB) to approve the continued use of this information collection activity.

The purpose of this notice is to solicit comments from the public (as well as affected agencies) concerning our information collection. We need this outside input to help us:

(1) Evaluate whether the proposed collection of information is necessary for the proper performance of the functions of the Agency, including whether the information will have practical utility;

(2) Evaluate the accuracy of our estimate of the burden of the proposed collection of information, including the validity of the methodology and assumptions used;

(3) Enhance the quality, utility, and clarity of the information to be collected; and

(4) Minimize the burden of the collection of information on those who are to respond, through use, as appropriate, of automated, electronic, mechanical, and other collection technologies, e.g., permitting electronic submission of responses.

Estimate of burden: Public reporting burden for this collection of information is estimated to average .00855 hours per response.

Respondents: State veterinarians, livestock inspectors, and herd owners.

Estimated number of respondents: 7,278.

Estimated number of responses per respondent: 858.5119.

Estimated annual number of responses: 6,248,250.

Estimated total annual burden on respondents: 52,395 hours. (Due to rounding, the total annual burden hours may not equal the product of the annual number of responses multiplied by the average reporting burden per response.)

All responses to this notice will be summarized and included in the request for OMB approval. All comments will also become a matter of public record.

Done in Washington, DC, this 18th day of September 1997.

Craig A. Reed,

Acting Administrator, Animal and Plant Health Inspection Service.

[FR Doc. 97–25327 Filed 9–23–97; 8:45 am]

BILLING CODE 3410–34–P

DEPARTMENT OF AGRICULTURE

Animal and Plant Health Inspection Service

[Docket No. 97–089–1]

Notice of Request for Extension of Approval of an Information Collection

AGENCY: Animal and Plant Health Inspection Service, USDA.

ACTION: Extension of approval of an information collection; comment request.

SUMMARY: In accordance with the Paperwork Reduction Act of 1995, this notice announces the Animal and Plant Health Inspection Service's intention to request an extension of approval of an information collection in support of the Pseudorabies Eradication Program.

DATES: Comments on this notice must be received by November 24, 1997 to be assured of consideration.

ADDRESSES: Send comments regarding the accuracy of burden estimate, ways to minimize the burden (such as through the use of automated collection techniques or other forms of information technology), or any other aspect of this collection of information to: Docket No. 97–089–1, Regulatory Analysis and Development, PPD, APHIS, suite 3C03, 4700 River Road Unit 118, Riverdale, MD 20737–1238. Please send an original and three copies, and state that your comments refer to Docket 97–089–1. Comments received may be inspected at USDA, room 1141, South Building, 14th Street and Independence Avenue SW., Washington, DC, between 8 a.m. and 4:30 p.m., Monday through Friday, except holidays. Persons wishing to inspect comments are requested to call ahead on (202) 690–2817 to facilitate entry into the comment reading room.

FOR FURTHER INFORMATION: For information regarding the Pseudorabies Eradication Program, contact Dr. Arnold Taft, Senior Staff Veterinarian, National Animal Health Programs, VS, APHIS, 4700 River Road Unit 37, Riverdale, MD 20737–1231, (301) 734–4916; or e-mail Ataft@aphis.usda.gov. For copies of more detailed information on the information collection, contact Mr. Gregg Ramsey, Agency Support Service Specialist, at (301) 734–5582.

SUPPLEMENTARY INFORMATION:

Title: Pseudorabies.

OMB Number: 0579–0070.

Expiration Date of Approval: April 30, 1998.

Type of Request: Extension of approval of an information collection.

Abstract: The Animal and Plant Health Inspection Service (APHIS) of the U.S. Department of Agriculture is responsible for preventing the spread of contagious, infectious, or communicable animal diseases from one State to another, and for eradicating such diseases from the United States when feasible.

In connection with this mission, APHIS regulates the interstate movement of swine in order to carefully control the movement of swine that are infected with or exposed to pseudorabies. The most common method of pseudorabies transmission is the movement of infected swine from one herd to another.

Regulating the interstate movement of these animals requires the use of certain information gathering activities, including the completion of documents attesting to the health status of the swine being moved, the number of swine being moved in a particular shipment, the shipment's point of origin, and the shipment's destination.

With this information we are able to carefully monitor the location of infected or exposed animals and prevent them from coming into contact with healthy animals.

These documents also provide useful ''traceback'' information in the event an infected animal is discovered and an investigation must be launched to determine where the animal originated, as well as the number and location of other animals with which it may have had contact during its interstate movement.

The information provided by these documents is critical to our ability to prevent the interstate spread of pseudorabies, and therefore plays a vital role in our Pseudorabies Eradication Program.

We are asking the Office of Management and Budget (OMB) to approve the continued use of this information collection activity.

The purpose of this notice is to solicit comments from the public (as well as affected agencies) concerning our information collection. We need this outside input to help us:

(1) Evaluate whether the proposed collection of information is necessary for the proper performance of the functions of the Agency, including whether the information will have practical utility;

(2) Evaluate the accuracy of our estimate of the burden of the proposed collection of information, including the validity of the methodology and assumptions used;

(3) Enhance the quality, utility, and clarity of the information to be collected; and

(4) Minimize the burden of the collection of information on those who are to respond, through use, as appropriate, of automated, electronic, mechanical, and other collection technologies, e.g., permitting electronic submission of responses.

Estimate of burden: Public reporting burden for this collection of information is estimated to average .0208 hours per response.

Respondents: U.S. producers, shippers, State animal protection authorities.

Estimated number of respondents: 30,050.

Estimated number of responses per respondent: 2.6689.

Estimated annual number of responses: 80,200.

Estimated total annual burden on respondents: 1,668 hours.

All responses to this notice will be summarized and included in the request for OMB approval. All comments will also become a matter of public record.

Done in Washington, DC, this 18th day of September 1997.

Craig A. Reed,

Acting Administrator, Animal and Plant Health Inspection Service.

[FR Doc. 97–25328 Filed 9–23–97; 8:45 am]

BILLING CODE 3410–34–P

COMMISSION ON CIVIL RIGHTS

Privacy Act of 1974; System of Records

AGENCY: Commission on Civil Rights.

ACTION: Amendment of system of records to include new routine uses.

SUMMARY: In accordance with the Privacy Act (5 U.S.C. 552a(e)(11)), the U.S. Commission on Civil Rights (USCCR) is issuing notice of our intent to amend the system of records entitled the Personnel Records—CRC–007 to include new routine uses. We invite public comment on this publication.

DATES: The changes will become effective as proposed, on October 1, 1997, unless comments which would warrant our preventing the changes from taking effect are received on or before 30 days from the date of this notice.

ADDRESSES: Interested individuals may comment on this publication by writing to Myrna Hernandez—U.S. Commission on Civil Rights—624 9th Street NW., Suite 510, Washington, DC 20425. All comments received will be available for public inspection at that address.

FOR FURTHER INFORMATION CONTACT:

Myrna Hernandez, U.S. Commission on Civil Rights, 624 9th Street NW., Suite 510, Washington, DC 20425.

SUPPLEMENTARY INFORMATION:

I. Discussion of Proposed Changes to Routine Use

Pursuant to the Pub. L. 104–193, the Personal Responsibility and Work Opportunity Reconciliation Act of 1996, the U.S. Commission on Civil Rights will disclose data from its USDA Payroll Personnel System-National Finance Center to the Office of Child Support Enforcement, Administration for Children and Families, Department of Health and Human Services for use in its Federal Parent Locator System (FPLS) and Federal Tax Offset System, DHHS/OCSE No. 09–90–0074. Information on this system was last published at 61 FR 38754, July 25, 1996.

FPLS is a computerized network through which States may request location information from Federal and State agencies to find non-custodial parents and/or their employers for purposes of establishing paternity and securing support.

Effective October 1, 1997, the FPLS will be enlarged to include the National Directory of New Hires, a database containing information on employees commencing employment, quarterly wage data on private and public sector employees, and information on unemployment compensation benefits. Effective October 1, 1998, the FPLS will be expanded to include a Federal Case Registry. The Federal Case Registry will contain abstracts on all participants involved in child support enforcement cases. When the Federal Case Registry is instituted, its files will be matched on an ongoing basis against the files in the National Directory of New Hires to determine if an employee is a participant in a child support case anywhere in the country. If the FPLS identifies a person as being a participant in a State child support case, that State will be notified of the participant's current employer. State requests to the FPLS for location information will also continue to be processed after October 1, 1998.

The data to be disclosed by the U.S. Commission on Civil Rights to the FPLS include: name, address, social security number and name and address of the agency.

In addition, names and social security numbers submitted by the U.S. Commission on Civil Rights to the FPLS will be disclosed by the Office of Child Support Enforcement to the Social Security Administration for verification to ensure that the social security number provided is correct.

The data disclosed by the U.S. Commission on Civil Rights to the FPLS will also be disclosed by the Office of Child Support Enforcement to the Secretary of the Treasury for use in verifying claims for the advance payment of the earned income tax credit or to verify a claim of employment on a tax return.

II. Compatibility of Proposed Routine Uses

We are proposing these routine uses in accordance with the Privacy Act (5 U.S.C. 552a(b)(3)). The Privacy Act permits the disclosure of information about individuals without their consent for a routine use where the information will be used for a purpose which is compatible with the purpose for which the information was originally collected. The Office of Management and Budget has indicated that a ''compatible'' use is a use which is necessary and proper. *See* OMB Guidelines, 51 FR 18982, 18985 (1986). Since the proposed uses of the data are required by Pub. L. 104–193, they are clearly necessary and proper uses, and therefore ''compatible'' uses which meet Privacy Act requirements.

III. Effect of the Proposed Changes on Individuals

We will disclose information under the proposed routine uses only as required by Pub. L. 104–193 and as permitted by the Privacy Act.

Accordingly, the Personnel Records system notice originally published at FR vol. 40, no. 171, September 3, 1975, is amended as set forth below.

CRC–007

SYSTEM NAME:

Personnel Records.

* * * * *

ROUTINE USES OF RECORDS MAINTAINED IN THE SYSTEM, INCLUDING CATEGORIES OF USERS AND THE PURPOSES OF SUCH USES:

(1) To the Office of Child Support Enforcement, Administration for Children and Families, Department of Health and Human Services Federal Parent Locator System (FPLS) and Federal Tax Offset System for use in locating individuals and identifying their income sources to establish paternity, establish and modify orders of support and for enforcement action.

(2) To the Office of Child Support Enforcement for release to the Social Security Administration for verifying social security numbers in connection with the operation of the FPLS by the Office of Child Support Enforcement.

(3) To Office of Child Support Enforcement for release to the Department of the Treasury for purposes of administering the Earned Income Tax Credit Program (Section 32, Internal Revenue Code of 1986) and verifying a claim with respect to employment on a tax return.

* * * * *

Ruby G. Moy,

Staff Director.

[FR Doc. 97–25273 Filed 9–23–97; 8:45 am]

BILLING CODE 6335–01–M

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

[I.D. 091597C]

Endangered Species; Permits

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Receipt of an application for a scientific research permit (1067).

SUMMARY: Notice is hereby given that the California Department of Fish and Game in Sacramento, CA (CDFG) has applied in due form for a permit that would authorize takes of a threatened species for scientific research.

DATES: Written comments or requests for a public hearing on this application must be received on or before October 24, 1997.

ADDRESSES: The application and related documents are available for review in the following offices, by appointment:

Office of Protected Resources, F/PR3, NMFS, 1315 East-West Highway, Silver Spring, MD 20910–3226 (301–713–1401); and

Protected Species Division, NMFS, 777 Sonoma Avenue, Room 325, Santa Rosa, CA 95404–6528 (707 575–6066).

Written comments or requests for a public hearing should be submitted to the Protected Species Division in Santa Rosa, CA.

SUPPLEMENTARY INFORMATION: CDFG requests a five-year permit under the authority of section 10 of the Endangered Species Act of 1973 (ESA) (16 U.S.C. 1531–1543) and the NMFS regulations governing ESA-listed fish and wildlife permits (50 CFR parts 217–227), for takes of adult and juvenile, threatened, central California coast coho salmon (*Oncorhynchus kisutch*) associated with fishery studies in drainages throughout the Evolutionarily Significant Unit. Five CDFG workplans are defined in this application. These

cummulative studies consist of: (1) juvenile coho salmon distribution and abundance surveys; (2) habitat typing; (3) spawner surveys; (4) out-migrant studies; and (5) the acquisition of tissue/scale samples for genetic studies. ESA-listed juvenile fish are proposed to be observed or captured, anesthetized, handled (weighed, measured, sampled for tissues and/or scales, and fin-clipped), allowed to recover from the anesthetic, and released. ESA-listed adult fish carcasses are proposed to be collected, handled (measured and sampled for tissues and/or scales), and returned to the water at the collection site. ESA-listed juvenile fish indirect mortalities associated with the research are also requested.

Those individuals requesting a hearing on this request for a permit should set out the specific reasons why a hearing would be appropriate (see **ADDRESSES**). The holding of such a hearing is at the discretion of the Assistant Administrator for Fisheries, NOAA. All statements and opinions contained in the above application summaries are those of the applicants and do not necessarily reflect the views of NMFS.

Dated: September 18, 1997.

Nancy Chu,

Chief, Endangered Species Division, Office of Protected Resources, National Marine Fisheries Service.

[FR Doc. 97–25302 Filed 9-23-97; 8:45 am]

BILLING CODE 3510–22–F

DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

[I.D. 091697D]

Endangered Species; Permits

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Receipt of an application for a scientific research permit (1089).

SUMMARY: Notice is hereby given that Entrix Inc. At Walnut Creek, CA has applied in due form for a permit authorizing takes of an endangered species for scientific research purposes.

DATES: Written comments or requests for a public hearing on this application must be received on or before October 24, 1997.

ADDRESSES: The application and related documents are available for review in the following offices, by appointment:

Office of Protected Resources, F/PR3, NMFS, 1315 East-West Highway, Silver Spring, MD 20910–3226 (301–713–1401); and

Protected Species Division, NMFS, 777 Sonoma Avenue, Room 325, Santa Rosa, CA 95404–6528 (707–575–6066).

Written comments or requests for a public hearing should be submitted to the Protected Species Division in Santa Rosa, CA.

SUPPLEMENTARY INFORMATION: Entrix Inc. requests a permit under the authority of section 10 of the Endangered Species Act of 1973 (ESA) (16 U.S.C. 1531–1543) and the NMFS regulations governing ESA-listed fish and wildlife permits (50 CFR parts 217–227).

Entrix Inc. requests a five-year permit for takes of adult and juvenile, endangered, southern California coast steelhead (*Oncorhynchus mykiss*) associated with fish population and habitat studies in the Santa Ynez, Santa Clara and Ventura Rivers and their tributaries within the Evolutionarily Significant Unit. The studies consist of five assessment tasks for which ESA-listed fish are proposed to be taken: (1) Presence/absence, (2) population estimates, (3) spawner surveys, (4) genetic sampling, and (5) habitat quality evaluation. ESA-listed fish are proposed to be observed or captured, anesthetized, handled, allowed to recover from the anesthetic, and released. ESA-listed adult and juvenile salmon indirect mortalities associated with the research are also requested.

Those individuals requesting a hearing on this request for a permit should set out the specific reasons why a hearing would be appropriate (see **ADDRESSES**). The holding of such a hearing is at the discretion of the Assistant Administrator for Fisheries, NOAA. All statements and opinions contained in the above permit application summaries are those of the applicants and do not necessarily reflect the views of NMFS.

Dated: September 17, 1997.

Nancy Chu,

Chief, Endangered Species Division, Office of Protected Resources, National Marine Fisheries Service.

[FR Doc. 97–25303 Filed 9-23-97; 8:45 am]

BILLING CODE 3510–22–F

DEPARTMENT OF DEFENSE

Office of the Secretary

Submission for OMB Review; Comment Request

ACTION: Notice.

The Department of Defense has submitted to OMB for clearance, the following proposal for collection of information under the provisions of the Paperwork Reduction Act (44 U.S.C. Chapter 35).

Title: Department of Defense M256A1 Outreach.

Type of Request: New collection; Emergency Processing requested with a shortened public comment period ending October 1, 1997. An approval date of October 8, 1997 is requested.

Number of Respondents: 777.

Responses Per Respondent: 1.

Annual Responses: 777.

Average Burden Per Response: 45 minutes.

Annual Burden Hours: 583 hours.

Needs and Uses: The information collection is necessary to facilitate the investigation of possible, positive M256A1 chemical warfare agent detections at different dates and locations in the Kuwait Theater of Operations. The information collected will be used to determine which Gulf War units and veterans may have further information about these incidents, discover if there were any other observed detections, contribute to a better understanding of the events during and after the Gulf War, and encourage enrollment in a DoD or VA clinical program. Respondents are Gulf War veterans who are not serving on active duty and whose units were in the vicinity of the detection.

Affected Public: Individuals or households.

Frequency: On occasion.

Respondent's Obligation: Voluntary.

OMB Desk Officer: Ms. Allison Eydt.

Written comments and recommendations on the proposed information collection should be sent to Ms. Eydt at the Office of Management and Budget, Desk Office for DoD, room 10235, New Executive Office Building, Washington, DC 20503, or via facsimile at (202) 395–6974.

DOD Clearance Officer: Mr. Robert Cushing.

Requests for copies of the information collection proposal should be sent to Mr. Cushing at OSD/WHS/DIOR, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202–4302, or via facsimile at (703) 604–6270, or requested telephonically at (703) 604–4582.

Dated: September 18, 1997.

Patricia L. Toppings,

Alternate OSD Federal Register Liaison Officer, Department of Defense.

[FR Doc. 97–25270 Filed 9–23–97; 8:45 am]

BILLING CODE 5000–04–M

DEPARTMENT OF EDUCATION

National Advisory Committee on Institutional Quality and Integrity; Meeting

AGENCY: National Advisory Committee on Institutional Quality and Integrity, Education.

ACTION: Notice of public meeting.

SUMMARY: This notice sets forth the proposed agenda of the National Advisory Committee on Institutional Quality and Integrity. Notice of this meeting is required under section 10(a)(2) of the Federal Advisory Committee Act. This document is intended to notify the general public of its opportunity to attend this public meeting.

DATES AND TIMES: November 19–21, 1997, 8:00 a.m. until 6:00 p.m.

ADDRESSES: The Latham Hotel, 3000 M Street, N.W., Washington, D.C. 20007. The meeting site is accessible to individuals with disabilities. An individual with a disability who will need an accommodation to participate in the meeting (e.g., interpreting service, assistive listening device, or materials in an alternate format) should notify the contact person listed in this notice at least two weeks before the scheduled meeting date. Although the Department will attempt to meet a request received after that date, the requested accommodations may not be available because of insufficient time to arrange it.

FOR FURTHER INFORMATION CONTACT: Carol F. Sperry, Executive Director, National Advisory Committee on Institutional Quality and Integrity, U.S. Department of Education, 7th & D Street, SW, Room 3082, ROB 3, Washington, DC. 20202–7592, telephone: (202) 260–3636. Individuals who use a telecommunications device for the deaf (TDD) may call the Federal Information Relay Service (FIRS) at 1–800–877–8339 between 8:00 a.m. and 8:00 p.m., Eastern time, Monday through Friday.

SUPPLEMENTARY INFORMATION: The National Advisory Committee on Institutional Quality and Integrity is established under Section 1205 of the Higher Education Act (HEA) as amended by Public Law 102–325 (20 U.S.C. 1145). The Committee advises the Secretary of Education with respect to the establishment and enforcement of the criteria for recognition of accrediting agencies or associations under subpart 2 of part H of Title IV, HEA, the recognition of specific accrediting agencies or associations, the preparation and publication of the list of nationally recognized accrediting agencies and associations, and the eligibility and certification process for institutions of higher education under Title IV, HEA. The Committee also develops and recommends to the Secretary standards and criteria for specific categories of vocational training institutions and institutions of higher education for which there are not recognized accrediting agencies, associations, or State agencies, in order to establish eligibility for such institutions on an interim basis for participation in federally funded programs.

Agenda

The meeting on November 19–21, 1997 is open to the public. The following agencies will be reviewed during the November 1997 meeting of the Advisory Committee:

Petitions for Renewal of Recognition—

1. Accreditation Board for Engineering and Technology, Inc. (Scope of recognition: the accreditation of basic (baccalaureate) and advanced (master's) level programs in engineering, associate and baccalaureate degree programs in engineering technology, and engineering-related programs at the baccalaureate and advanced degree level).

2. Accrediting Council for Continuing Education and Training (Scope of recognition: the accreditation of institutions of higher education that offer non-collegiate continuing vocational education programs and higher education programs of non-collegiate continuing vocational education).

3. American Optometric Association, Council on Optometric Education (Scope of recognition: the accreditation and preaccreditation (''Reasonable Assurance/Preliminary Approval'' {for professional degree programs} and ''Candidacy Pending'' {for optometric residency programs in facilities of Veterans' Administration}) of professional optometric degree programs, optometric residency programs, and optometric technician programs).

4. Association for Clinical Pastoral Education, Inc., Accreditation Commission (Scope of recognition: the accreditation and preaccreditation (''Candidacy for Accredited Membership'') of basic, advanced, and supervisory clinical pastoral education programs).

5. Commission on Opticianry Accreditation (Scope of recognition: the accreditation of two-year programs for the ophthalmic dispenser and one-year programs for the ophthalmic laboratory technician).

6. National Association of Schools of Art and Design, Commission on Accreditation (Scope of recognition: the accreditation of institutions and units within institutions offering degree-granting and non-degree-granting programs in art, design, and art/design-related disciplines).

7. National Association of Schools of Dance, Commission on Accreditation (Scope of recognition: the accreditation of institutions and units within institutions offering degree-granting and non-degree-granting programs in dance and dance-related disciplines).

8. National Association of Schools of Music, Commission on Accreditation, Commission on Non-Degree-Granting Accreditation and Commission on Community/Junior College Accreditation (Scope of recognition: the accreditation of institutions and units within institutions offering degree-granting and non-degree-granting programs in music and music-related disciplines, including community/junior colleges and independent degree-granting and non-degree-granting institutions).

9. National Association of Schools of Theater, Commission on Accreditation (Scope of recognition: the accreditation of institutions and units within institutions offering degree-granting and non-degree-granting programs in theater and theater-related disciplines).

10. New England Association of Schools and Colleges (Scope of recognition: the accreditation and preaccreditation (''Candidate for Accreditation'') of non-degree granting postsecondary vocational, technical and career institutions and degree-granting institutions of higher education awarding an associate degree in Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont).

11. North Central Association of Colleges and Schools, Commission on Institutions of Higher Education (Scope of recognition: the accreditation and preaccreditation (''Candidate for Accreditation'') of institutions of higher education in Arizona, Arkansas, Colorado, Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, New Mexico, North Dakota, Ohio, Oklahoma, South Dakota, West Virginia, Wisconsin, and Wyoming).

12. Northwest Association of Schools and Colleges, Commission on Colleges (Scope of recognition: the accreditation and preaccreditation (''Candidate for Accreditation'') of institutions of higher education in Alaska, Idaho, Montana,

Nevada, Oregon, Utah, and Washington).

13. Western Association of Schools and Colleges, Accrediting Commission for Community and Junior Colleges (Scope of recognition: the accreditation and preaccreditation (''Candidate for Accreditation'') of community and junior colleges in California, Hawaii, American Samoa, Guam, the Republic of Palau, the Federated States of Micronesia, and the Republic of the Marshall Islands).

Petitions for Renewal of Recognition and Expansion of Scope—1. merican Psychological Association, Committee on Accreditation (Current scope of recognition: the accreditation of doctoral programs in clinical, counseling, school, and combined professional-scientific psychology, and predoctoral internship training programs in professional psychology). (Requested expansion of scope: the accreditation of post-doctoral residency programs in professional psychology).

2. American Speech-Language-Hearing Association (Current scope of recognition: the accreditation of Master's degree programs in speech-language pathology and audiology). (Requested expansion of scope: the accreditation and preaccreditation (''Candidacy'') of graduate educational programs that provide for entry-level professional preparation with a major emphasis in audiology and/or speech-language pathology.)

3. Council on Occupational Education (Current scope of recognition: the accreditation and preaccreditation (''Candidate for Accreditation'') of non-degree granting postsecondary occupational/vocational institutions and those postsecondary occupational/vocational education institutions currently accredited by the Council that either have state authorization to grant the applied associate degree in specific vocational/occupational fields or that receive such authorization during the Council's current recognition period). (Requested expansion of scope: the accreditation and preaccreditation (''Candidate for Accreditation'') of postsecondary, prebaccalaureate, degree-granting and non-degree-granting vocational education institutions nationwide.)

Interim and Progress Reports (Interim and Progress reports are follow-up reports on an accrediting agency's compliance with specific criteria for recognition that was requested by the Secretary when the Secretary granted recognition to the agency)—

1. American Bar Association, Council of the Section of Legal Education and Admissions to the Bar.

2. Middle States Association of Colleges and Schools, Commission on Higher Education.

3. National Environmental Health Science and Protection Accreditation Council.

4. New York State Board of Regents.

5. Southern Association of Colleges and Schools, Commission on Colleges.

6. Western Association of Schools and Colleges, Accrediting Commission for Senior Colleges and Universities.

Progress Report—1. National League for Nursing Accrediting Commission.

State Agency Recognized for the Approval of Public Postsecondary Vocational Education

Interim Report—1. New York State Board of Regents, Vocational Education.

State Agency Recognized for the Approval of Nurse Education

Interim Report—1. New York State Board of Regents, Nursing Education Unit.

Federal Agency Seeking Degree-Granting Authority

In accordance with the Federal policy governing the granting of academic degrees by Federal agencies (approved by a letter from the Director, Bureau of the Budget, to the Secretary, Health, Education, and Welfare, dated December 23, 1954), the Secretary is required to establish a review committee to advise the Secretary concerning any legislation that may be proposed that would authorize the granting of degrees by a Federal agency. The review committee forwards its recommendation concerning a Federal agency's proposed degree-granting authority to the Secretary, who then forwards the committee's recommendation and the Secretary's recommendation to the Office of Management and Budget for review and transmittal to the Congress. The Secretary uses the Advisory Committee as the review committee required for this purpose. Accordingly, the Advisory Committee will review the following institution at this meeting:

Proposed Master's Degree-Granting Authority—1. U.S. Army War College, Carlisle, PA (request to award a master's degree in Strategic Studies).

A request for comments on agencies that are being reviewed during this meeting was published in the **Federal Register** on July 2, 1997.

This notice invites third-party oral presentations before the Advisory Committee. It does not constitute another call for written comment. Requests for oral presentation before the Advisory Committee should be submitted in writing to Ms. Sperry at the address above by October 20, 1997. Requests should include the names of all persons seeking an appearance, the organization they represent, and a brief summary of the principal points to be made during the oral presentation. Presenters are requested not to distribute written materials at the meeting. Presenters who wish to provide the Advisory Committee with written copies of their proposed testimony or with documents directly, but briefly (no more than 6 pages maximum), illustrating the main points of their oral testimony may submit them to Ms. Sperry by October 20, 1997 (one original and 25 copies). Documents submitted after that date will not be distributed to the Committee. Presenters are reminded that this call for third-party oral testimony does not constitute a call for additional written comment.

At the conclusion of the meeting, attendees may, at the discretion of the Committee chair, be invited to address the Committee briefly on issues pertaining to the functions of the Committee, as identified in the section above on Supplementary Information. Attendees interested in making such comments should inform Ms. Sperry before or during the meeting.

A record will be made of the proceedings of the meeting and will be available for public inspection at the Office of Postsecondary Education, U.S. Department of Education, 7th and D Streets, SW, room 3082, ROB 3, Washington, DC, between the hours of 8:00 a.m. and 4:30 p.m., Monday through Friday, except Federal holidays.

Authority: 5 U.S.C. Appendix 2.

Dated: September 19, 1997.

David A. Longanecker,

Assistant Secretary for Postsecondary Education.

[FR Doc. 97–25321 Filed 9–23–97; 8:45 am]

BILLING CODE 4000–01–M

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. RP97–172–007]

ANR Storage Company; Notice of Compliance Filing

September 18, 1997.

Take notice that on September 15, 1997, ANR Storage Company (ANR Storage) tendered for filing as part of its FERC Gas Tariff, Original Volume No. 1, the tariff sheets listed on Appendix A to the filing, to be effective November 1, 1997.

ANR Storage states that the tariff sheets listed on Appendix A are being filed in compliance with the Commission's Order issued on June 27, 1997 in the above captioned docket. The filing incorporates modifications to the GISB standards as proposed by Order 587–C, effective November 1, 1997.

ANR states that copies of the filing were served upon the company's Jurisdictional customers.

Any person desiring to protest said filing should file a protest with the Federal Energy Regulatory Commission, 888 First Street, N.E., Washington, D.C. 20426, in accordance with Section 385.211 of the Commission's Rules and Regulations. All such protests must be filed in accordance with Section 154.210 of the Commission's Regulations. Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceeding. Copies of this filing are on file with the Commission and are available for public inspection in the Public Reference Room.

Lois D. Cashell,

Secretary.

[FR Doc. 97–25289 Filed 9–23–97; 8:45 am]

BILLING CODE 6717–01–M

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. RP97–170–007]

Blue Lake Gas Storage Company; Notice of Compliance Filing

September 18, 1997.

Take notice that on September 15, 1997, Blue Lake Gas Storage Company (Blue Lake) tendered for filing as part of its FERC Gas Tariff, First Revised Volume No. 1, the tariff sheets listed on Appendix A to the filing, to be effective November 1, 1997.

Blue Lake states that the tariff sheets listed on Appendix A are being filed in compliance with the Commission's Order issued on June 27, 1997 in the above captioned docket. The filing incorporates modifications to the GISB standards as proposed by Order 587–C, effective November 1, 1997.

Blue Lake states that copies of the filing were served upon the company's Jurisdictional customers.

Any person desiring to protest said filing should file a protest with the Federal Energy Regulatory Commission, 888 First Street, N.E., Washington, D.C. 20426, in accordance with Section 385.211 of the Commission's Rules and Regulations. All such protests must be filed in accordance with Section 154.210 of the Commission's Regulations. Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceeding. Copies of this filing are on file with the Commission and are available for public inspection in the Public Reference Room.

Lois D. Cashell,

Secretary.

[FR Doc. 97–25288 Filed 9–23–97; 8:45 am]

BILLING CODE 6717–01–M

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. TM98–1–120–001]

Carnegie Interstate Pipeline Company; Notice of Proposed Change in FERC Gas Tariff

September 18, 1997.

Take notice that on September 12, 1997, Carnegie Interstate Pipeline Company (CIPCO), tendered for filing to be part of its FERC Gas Tariff, Original Volume No. 1, the following revised tariff sheet, with an effective date of October 1, 1997:

Sub. Fourteenth Revised Sheet No. 7

CIPCO states that the above tariff sheet has been revised to reflect a modification to the Annual Charge Adjustment fee, in accordance with the Commission's most recent Annual Charge billing to CIPCO. The Annual Charge Unit Surcharge authorized by the Commission for fiscal year 1998 is $0.0022 per Dth.

Any person desiring to protest said filing should file a protest with the Federal Energy Regulatory Commission, 888 First Street NE., Washington, DC 20426, in accordance with 18 CFR 385.211 of the Commission's Rules and Regulations. All such protests must be filed in accordance with Section 154.210 of the Commission's Regulations. Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceeding. Copies of this filing are on file with the Commission and are available for public inspection in the public reference room.

Lois D. Cashell,

Secretary.

[FR Doc. 97–25299 Filed 9–23–97; 8:45 am]

BILLING CODE 6717–01–M

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. TM98–1–97–001]

Chandeleur Pipe Line Company; Notice of Proposed Changes in FERC Gas Tariff

September 18, 1997.

Take notice on September 12, 1997, Chandeleur Pipe Line Company (Chandeleur) amends its August 22, 1997 filing on the following tariff sheet to become effective October 1, 1997:

Substitute Seventh Revised Sheet No. 5

Chandeleur is amending its rates from $0.0021 per Dth to $0.0022 per Dth to reflect the Federal Energy Regulatory Commission's Correction for Annual Charges Unit Charge FY 1997 of natural gas pipeline companies.

Any person desiring to protest this filing should file a protest with the Federal Energy Regulatory Commission, 888 First Street, NE, Washington, DC 20426, in accordance with Section 385.211. All such protests must be filed in accordance with Section 154.210 of the Commission's Regulations. Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceeding. Copies of this filing are on file with the Commission and are available for public inspection in the Public Reference Room.

Lois D. Cashell,

Secretary.

[FR Doc. 97–25295 Filed 9–23–97; 8:45 am]

BILLING CODE 6717–01–M

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. ER97–4422–000]

Cinergy Services, Inc.; Notice of Filing

September 18, 1997.

Take notice that on August 29, 1997, Cinergy Services, Inc. (Cinergy) tendered for filing on behalf of its operating companies, PSI Energy Inc. (PSI) a change to the rate for wheeling service pursuant to the Interconnection Agreement (Agreement) between PSI, Hoosier Energy Rural Electric Cooperative, Inc. (Hoosier Energy) and Southern Indiana Gas and Electric Company.

The file change modifies PSI's rate for wheeling service to Hoosier Energy

under Service Schedule F—Wheeling of the Agreement.

PSI has requested a waiver of the Commission's Rules and Regulations to permit this proposed rate for service to become effective November 1, 1997.

Copies of the filing were served on Hoosier Energy Rural Electric Cooperative, Inc., Southern Indiana Gas and Electric Company and the Indiana Utility Regulatory Commission.

Any person desiring to be heard or to protest said filing should file a motion to intervene or protest with the Federal Energy Regulatory Commission, 888 First Street, NE., Washington, DC, 20426, in accordance with Rules 211 and 214 of the Commission's Rules of Practice and Procedures (18 CFR 385.211 and 18 CFR 385.214). All such motions or protests should be filed on or before September 30, 1997. Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceedings. Any person wishing to become a party must file a motion to intervene. Copies of this filing are on file with the Commission and are available for public inspection.

Lois D. Cashell,

Secretary.

[FR Doc. 97–25286 Filed 9–23–97; 8:45 am]

BILLING CODE 6717–01–M

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. CP97–752–000]

Distrigas of Massachusetts Corporation; Notice of Application

September 18, 1997.

Take notice that on September 12, 1997, Distrigas of Massachusetts Corporation (DOMAC), 75 State Street, Boston, Massachusetts, 02109, filed in Docket No. CP97–752–000 an application for a limited-term certificate of public convenience and necessity, for the period commencing on November 1, 1997 and ending on March 31, 1999, requesting authority to install certain temporary air injection equipment at its liquefied natural gas (LNG) terminal in Everett, Massachusetts.

DOMAC states that there are likely to be several instances during the period from November 1, 1997 through March 31, 1999 when it will be necessary to air stabilize higher than usual BTU content LNG cargoes through the use of additional air injection facilities. According to DOMAC, there are limits to the amount of higher-BTU content LNG that it can stabilize using its existing permanent air injection capacity, particularly when a higher-BTU cargo is received followed at a short interval by a subsequent cargo. Accordingly, DOMAC seeks authority to install and operate temporary air injection facilities in preparation for such expected receipts.

DOMAC states that the limited-term certificate requested in this application will neither affect, nor require modification to, its August 1, 1990, Operating Agreement with Commonwealth Gas Company and Algonquin Gas Transmission Company.

Any person desiring to be heard or to make any protest with reference to said application should on or before October 9, 1997, file with the Federal Energy Regulatory Commission, 888 First Street, NE., Washington, DC 20426, a motion to intervene or a protest in accordance with the requirements of the Commission's Rules of Practice and Procedure (18 CFR 385.214 or 385.211) and the Regulations under the Natural Gas Act (18 CFR 157.10). All protests filed with the Commission will be considered by it in determining the appropriate action to be taken but will not serve to make the protestants parties to the proceeding. Any person wishing to become a party to a proceeding or to participate as a party in any hearing therein must file a motion to intervene in accordance with the Commission's Rules.

Take further notice that, pursuant to the authority contained in and subject to the jurisdiction conferred upon the Federal Energy Regulatory Commission by Sections 7 and 15 of the Natural Gas Act and the Commission's Rules of Practice and Procedure, a hearing will be held without further notice before the Commission or its designee on this application if no motion to intervene is filed within the time required herein, if the Commission on its review of the matter finds that permission and approval for the proposed abandonment and grant of certificate are required by the public convenience and necessity. If a motion for leave to intervene is timely filed, or if the Commission on its own motion believes that a formal hearing is required, further notice of such hearing will be duly given.

Under the procedure herein provided for, unless otherwise advised, it will be unnecessary for DOMAC to appear or be represented at the hearing.

Lois D. Cashell,

Secretary.

[FR Doc. 97–25281 Filed 9–23–97; 8:45 am]

BILLING CODE 6717–01–M

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. ER97–3715–000]

Duke Power Company; Notice of Filing

September 18, 1997.

Take notice that on August 28, 1997, Duke Power Company tendered for filing an amendment in the above-referenced docket.

Any person desiring to be heard or to protest said filing should file a motion to intervene or protest with the Federal Energy Regulatory Commission, 888 First Street, N.E., Washington, D.C. 20426, in accordance with Rules 211 and 214 of the Commission's Rules of Practice and Procedure (18 CFR 285.211 and 18 CFR 385.214). All such motions or protests should be filed on or before September 30, 1997. Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceeding. Any person wishing to become a party must file a motion to intervene. Copies of this filing are on file with the Commission and are available for public inspection.

Lois D. Cashell,

Secretary.

[FR Doc. 97–25283 Filed 9–23–97; 8:45 am]

BILLING CODE 6717–01–M

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. TM98–1–46–001]

Kentuky West Virginia Gas Company, L.L.C.; Notice of Proposed Change in FERC Gas Tariff

September 18, 1997.

Take notice that on September 12, 1997, Kentucky West Virginia Gas Company, L.L.C. (Kentucky West), tendered for filing to become part of its FERC Gas Tariff, Third Revised Volume No. 1, the following tariff sheets to be effective October 1, 1997:

Substitute Fourth Revised Sheet No. 4
Substitute Fourth Revised Sheet No. 5

On August 21, 1997, Kentucky West made its 1997 Annual Charge Adjustment (ACA) filing to incorporate the unit surcharge of $0.0021 consistent with the invoice received on August 6, 1997. After the filing was made, a revised invoice was received on August 26, 1997 which changed the ACA unit surcharge to $0.0022. This revised filing

is being made to reflect the August 26, 1997 ACA unit surcharge. Consistent with the August 21, 1997 filing, minor typographical changes were made on Sheet Nos. 4 and 5 to capitalize the ''C'' in customer.

Pursuant to Section 154.207 of the Commission's Regulations, Kentucky West requests that the Commission grant any waivers necessary to permit the tariff sheets contained herein to become effective October 1, 1997.

Kentucky West states that a copy of its filing has been served upon its customers and interested state commissions.

Any person desiring to protest this filing should file a protest with the Federal Energy Regulatory Commission, 888 First Street, N.E., Washington, D.C. 20426, in accordance with Section 385.211 of the Commission's Rules and Regulations. All such protests must be in accordance with Section 154.210 of the Commission's Regulations. Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceeding. Copies of this filing are on file with the Commission and are available for public inspection in the Public Reference Room.

Lois D. Cashell,

Secretary.

[FR Doc. 97–25293 Filed 9–23–97; 8:45 am]

BILLING CODE 6717–01–M

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. TM98–1–99–001]

Kern River Gas Transmission Company; Notice of Proposed Change in FERC Gas Tariff

September 18, 1997.

Take notice that on September 12, 1997, Kern River Gas Transmission (Kern River) tendered for filing as part of its FERC Gas Tariff, First Revised Volume No. 1, the following tariff sheets, to become effective October 1, 1997:

Substitute Ninth Revised Sheet No. 5
Substitute Ninth Revised Sheet No. 6

Kern River states that this filing updates Kern River's tariff to reflect a $.0022 per Dth Annual Charge Adjustment (ACA) surcharge to be effective for the twelve-month period beginning October 1, 1997 pursuant to Section 154.402 of the Commission's regulations. The ACA surcharge of $.0022 per Dth specified by the Commission is an increase of $.0003 per Dth from Kern River's current ACA surcharge.

Kern River also states that on August 29, 1997, it submitted a tariff filing in Docket No. TM98–1–99 to reflect a $.0021 per Dth ACA surcharge to be effective for the twelve-month period beginning October 1, 1997. The $.0021 per Dth factor was based on the Commission's August 1, 1997 Statement of Annual Charges. However, on August 20, 1997, the Commission issued a correction of the ACA unit surcharge from $.0021 per Dth to $.0022 per Dth. Accordingly, Kern River states that it is requesting to withdraw the tariff sheets submitted in its August 29, 1997 filing and is submitting the instant filing to reflect the revised ACA surcharge.

Any person desiring to protest this filing should file a protest with the Federal Energy Regulatory Commission, 888 First Street, NE., Washington, DC 20426, in accordance with Section 385.211 of the Commission's Rules and Regulations. All such protests must be filed as provided in Section 154.210 of the Commission's Regulations. Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceeding. Copies of this filing are on file with the Commission and are available for public inspection in the Public Reference Room.

Lois D. Cashell,

Secretary.

[FR Doc. 97–25296 Filed 9–23–97; 8:45 am]

BILLING CODE 6717–01–M

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. TM98–1–124–001]

Michigan Gas Storage Company; Notice of Proposed Changes in FERC Gas Tariff

September 18, 1997.

Take notice that on September 12, 1997, the Michigan Gas Storage Company, (MGS) tendered for filing as part of its FERC Gas Tariff, First Revised Volume No. 1, Sub. Sixth Revised Sheet No. 5, to be effective October 1, 1997.

MGS states that the purpose of its filing is to reflect a modification to the Annual Charge Adjustment fee, in accordance with the Commission's most recent Annual Charge billing. The Annual Charge Unit Surcharge authorized by the Commission for fiscal year 1998 is $0.0022 per Dth, which is an increase of $0.0002 per dth over the previous surcharge.

MGS states that copies of this filing were served on all firm customers, interested state commissions and all current interruptible customers.

Any person desiring to protest this filing should file a protest with the Federal Energy Regulatory Commission, 888 First Street, NE., Washington, DC 20426, in accordance with Section 385.211 of the Commission's Rules and Regulations. All such protests must be filed as provided in Section 154.210 of the Commission's Regulations. Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceeding. Copies of this filing are on file with the Commission and are available for public inspection in the Public Reference Room.

Lois D. Cashell,

Secretary.

[FR Doc. 97–25300 Filed 9–23–97; 8:45 am]

BILLING CODE 6717–01–M

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. TM98–1–47–001]

MIGC, Inc.; Notice of Compliance Filing

September 18, 1997.

Take notice that on September 12, 1997, MIGC, Inc. (MIGC) tendered for filing to as part of its FERC Tariff, First Revised Volume No. 1, Substitute Fifth Revised Sheet No. 4, to become effective October 1, 1997.

MIGC states that the instant filing is being submitted to reflect Annual Charge Adjustment unit charges applicable to transportation services during the fiscal year commencing October 1, 1997.

Any person desiring to protest said filing should file a protest with the Federal Energy Regulatory Commission, 888 First Street, N.E., Washington, DC 20426, in accordance with Section 385.211 of the Commission's Rules of Practice and Procedure. All such protests must be filed in accordance with Section 154.210 of the Commission's Regulations. Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceeding. Copies of this filing are on file with the

Commission and are available for public inspection.

Lois D. Cashell,

Secretary.

[FR Doc. 97–25294 Filed 9–23–97; 8:45 am]

BILLING CODE 6717–01–M

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. TM98–1–100–001]

Nora Transmission Company; Notice of Proposed Change in FERC Gas Tariff

September 18, 1997.

Take notice that on September 12, 1997, Nora Transmission Company (Nora), tendered for filing as part of its FERC Gas Tariff, First Revised Volume No. 1, the following tariff sheet, to be effective October 1, 1997:

Fourth Revised Sheet No. 4

On August 21, 1997, Nora made its 1997 Annual Charge Adjustment (ACA) filing to incorporate the unit surcharge of $0.0021 consistent with the invoice received on August 6, 1997. After the filing was made, a revised invoice was received on August 26, 1997 which changed the ACA unit surcharge to $0.0022. This revised filing is being made to reflect the August 26, 1997 ACA unit surcharge.

Pursuant to Section 154.207 of the Commission's Regulations, Nora requests that the Commission grant any waivers necessary to permit the tariff sheets contained herein to become effective October 1, 1997.

Nora states that a copy of its filing has been served upon its customers and interested state commissions.

Any person desiring to protest this filing should file a protest with the Federal Energy Regulatory Commission, 888 First Street, N.E., Washington, D.C. 20426, in accordance with Section 385.211 of the Commission's Rules and Regulations. All such protests must be filed in accordance with Section 154.210 of the Commission's Regulations. Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceeding. Copies of this filing are on file with the Commission and are available for public inspection in the Public Reference Room.

Lois D. Cashell,

Secretary.

[FR Doc. 97–25297 Filed 9–23–97; 8:45 am]

BILLING CODE 6717–01–M

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. RP97–528–000]

NorAm Gas Transmission Company; Notice of Proposed Changes in FERC Gas Tariff

September 18, 1997.

Take notice that on September 15, 1997, NorAm Gas Transmission Company (''NGT'') tendered for filing as part of its FERC Gas Tariff, Fourth Revised Volume No. 1, the following revised tariff sheets to be effective November 1, 1997:

Fifth Revised Sheet No. 1
Second Revised Sheet No. 34
First Revised Sheet No. 161
Third Revised Sheet No. 162
Third Revised Sheet No. 167
Second Revised Sheet No. 167A
Fourth Revised Sheet No. 169
Third Revised Sheet No. 169A
Third Revised Sheet No. 172
Second Revised Sheet No. 196A
Third Revised Sheet No. 205
Third Revised Sheet No. 233A

NGT states that the tariff sheets are being filed to correct administrative errors which occurred during its numerous GISB filings, as well as to make minor housekeeping changes.

Any person desiring to be heard or protest the proposed tariff sheets should file a motion to intervene or protest with the Federal Energy Regulatory Commission, 888 First Street, N.E., Washington, D.C. 20426, in accordance with Rules 214 and 211 of the Commission's Rules of Practice and Procedure (18 CFR 385.214 and 385.211). All such motions or protests should be filed on or as provided in Section 154.210 of the Commission's regulations. The protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestant parties to the proceeding. Any person wishing to become a party must file a motion to intervene. Copies of this filing are on file with the Commission and are available for public inspection.

Lois D. Cashell,

Secretary.

[FR Doc. 97–25292 Filed 9–23–97; 8:45 am]

BILLING CODE 6717–01–M

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. TM98–1–116–001]

OkTex Pipeline Company; Notice of Proposed Changes in FERC Gas Tariff

September 18, 1997.

Take notice that on September 12, 1997, OkTex Pipeline Company (OkTex) tendered for filing as part of its FERC Gas Tariff, Original Volume No. 1, the following tariff sheets, with an effective date of October 1, 1997:

Substitute Tenth Revised Sheet No. 5

OkTex states that the Substitute Tenth Revised Sheet No. 5 increases the OkTex Annual Charge Adjustment Clause (ACA) from $0.0020 to $0.0022 per Dekatherm.

OkTex states that copies of the filing were served upon the Company's jurisdictional customers and upon interested state commissions.

Any person desiring to protest said filing should file a protest with the Federal Energy Regulatory Commission, 888 First Street, N.E., Washington, DC 20426, in accordance with Section 385.211 of the Commission's Rules and Regulations. All such protests must be filed in accordance with Section 154.210 of the Commission's Regulations. Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceeding. Copies of this filing are on file with the Commission and are available for public inspection in the Public Reference Room.

Lois D. Cashell,

Secretary.

[FR Doc. 97–25298 Filed 9–23–97; 8:45 am]

BILLING CODE 6717–01–M

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. ER97–4293–000]

San Diego Gas & Electric Company; Notice of Filing

September 18, 1997.

Take notice that on August 22, 1997, San Diego Gas & Electric Company (SDG&E), tendered for filing and acceptance, pursuant to 18 CFR 35.13, Service Agreements (Service Agreements) with the following entities for Point-To-Point Transmission Service under SDG&E's Open Access Transmission Tariff (Tariff) filed in compliance with FERC Order No. 888:

1. Engage Energy US, L.P.
2. NP Energy Inc.
3. San Diego Gas & Electric Co. (Energy Trading)

SDG&E filed the executed Service Agreements with the Commission in compliance with applicable Commission regulations. SDG&E also provided Sheet No. 114 (attachment E) to the Tariff, which is a list of concurrent subscribers. SDG&E requests waiver of the Commission's notice requirement to permit an effective date as specified in the Attachment E to the Tariff.

Copies of this filing were served upon the Public Utilities Commission of the State of California and all interested parties.

Any person desiring to be heard or to protest said filing should file a motion to intervene or protest with the Federal Energy Regulatory Commission, 888 First Street, N.E., Washington, D.C. 20426, in accordance with Rules 211 and 214 of the Commission's Rules of Practice and Procedure (18 CFR 385.211 and 18 CFR 385.214). All such motions or protests should be filed on or before September 30, 1997. Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceeding. Any person wishing to make protestants parties to the proceeding. Any person wishing to become a party must file a motion to intervene. Copies of this filing are on file with the Commission and are available for public inspection.

Lois D. Cashell,

Secretary.

[FR Doc. 97–25285 Filed 9–23–97; 8:45 am]

BILLING CODE 6717–01–M

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. ER97–4243–000]

Southern Company Services, Inc.; Notice of Filing

September 18, 1997.

Take notice that on August 18, 1997, Southern Company Services, Inc. (SCS), acting on behalf of Alabama Power Company, Georgia Power Company, Gulf Power Company, Mississippi Power Company, and Savannah Electric and Power Company (collectively referred to as ''Southern Companies'') filed forty-four (44) service agreements for firm point-to-point transmission service and two (2) service agreements for non-firm point-to-point transmission service under Part II of the Open Access Transmission Tariff of Southern Companies. Six (6) firm agreements are between SCS, as agent for Southern Companies, and Aquila Power Corporation; six firm agreements are between SCS, as agent for Southern Companies, and Electric Clearinghouse, Inc.; three (3) firm agreements are between SCS, as agent for Southern Companies, and Sonat Power Marketing L.P.; seventeen (17) firm service agreements are between SCS, as agent for Southern Companies, and Southern Wholesale Energy, a Department of SCS; four (4) firm service agreements are between SCS, as agent for Southern Companies, and Tennessee Valley Authority; two (2) firm service agreements are between SCS, as agent for Southern Companies, and Tennessee Valley Authority; two (2) firm service agreements between SCS, as agent for Southern Companies, and Virginia Electric & Power Company; and three (3) firm service agreements are between SCS, as agent for Southern Companies, and Vitol Gas & Electric. The other three (3) firm service agreements are between SCS, as agent for Southern Companies, and (i) Entergy Service, Inc., (ii) Federal Energy Sales, Inc., and (iii) Koch Energy Trading, Inc. The two non-firm point-to-point transmission service agreements are between SCS, as agent for Southern Companies, and (i) Commonwealth Edison Company, and (ii) Orlando Utilities Commission.

Any person desiring to be heard or to protest said filing should file a motion to intervene or protest with the Federal Energy Regulatory Commission, 888 First Street, N.E., Washington, D.C. 20426, in accordance with Rules 211 and 214 of the Commission's Rules of Practice and Procedures (18 CFR 385.211 and 18 CFR 385.214). All such motions or protests should be filed on or before September 30, 1997. Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceedings. Any person wishing to become a party must file a motion to intervene. Copies of this filing are on file with the Commission and are available for public inspection.

Lois D. Cashell,

Secretary.

[FR Doc. 97–25284 Filed 9–23–97; 8:45 am]

BILLING CODE 6717–01–M

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. RP97–177–0906]

Steuben Gas Storage Company; Notice of Compliance Filing

September 18, 1997.

Take notice that on September 15, 1997, Steuben Gas Storage Company (Steuben) tendered for filing as part of its FERC Gas Tariff, Original Volume No. 1, the tariff sheets listed on Appendix A to the filing, to be effective November 1, 1997.

Steuben states that the tariff sheets listed on Appendix A are being filed in compliance with the Commission's Order issued on June 25, 1997 in the above Captioned docket. The filing incorporates modifications to the GISB standards as proposed by Order 587–C, effective November 1, 1997.

Steuben states that copies of the filing were served upon the company's Jurisdictional customers.

Any person desiring to protest said filing should file a protest with the Federal Energy Regulatory Commission, 888 First Street, N.E., Washington, D.C. 20426, in accordance with Section 385.211 of the Commission's Rules and Regulations. All such protests must be filed in accordance with Section 154.210 of the Commission's Regulations. Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceeding. Copies of this filing are on file with the Commission and are available for public inspection in the Public Reference Room.

Lois D. Cashell,

Secretary.

[FR Doc. 97–25290 Filed 9–23–97; 8:45 am]

BILLING CODE 6717–01–M

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. RP97–434–001]

Transwestern Pipeline Company; Notice of Compliance Filing

September 18, 1997.

Take notice that on September 15, 1997, Transwestern Pipeline Company (Transwestern), tendered for filing to become part of Transwestern's FERC Gas Tariff, Second Revised Volume No. 1, the following tariff sheet proposed to become effective on September 1, 1997:

Substitute Original Sheet No. 37E

Transwestern states that this filing is to comply with the Commission's August 29, 1997 Order in Docket No. RP97–434–000 pertaining to Transwestern's new interruptible Park 'N Ride Service under Rate Schedule PNR. The August 29 Order requires Transwestern to revise Section 9.1 of its tariff to provide that notice be given to Buyers via telephone and the Electronic Bulletin Board (EBB) for notices issued after business hours for the next calendar day.

Any person desiring to protest said filing should file a protest with the Federal Energy Regulatory Commission, 888 First Street, N.E., Washington, D.C., 20426, in accordance with Section 385.211 of the Commission's Rules and Regulations. All such protests must be filed in accordance with Section 154.210 of the Commission's Regulations. All protests will be considered by the Commission in determining the appropriate action to be taken in this proceeding, but will not serve to make Protestant a party to the proceeding. Copies of this filing are on file with the Commission and are available for inspection.

Lois D. Cashell,

Secretary.

[FR Doc. 97–25291 Filed 9–23–97; 8:45 am]

BILLING CODE 6717–01–M

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. CP97–745–000]

Williston Basin Interstate Pipeline Company; Notice of Request Under Blanket Authorization

September 18, 1997.

Take notice that on September 11, 1997, Williston Basin Interstate Pipeline Company (Williston Basin), 200 North Third Street, Suite 300, Bismarck, North Dakota 58501, filed in Docket No. CP97–745–000 a request pursuant to Sections 157.205 and 157.211 of the Commission's Regulations under the Natural Gas Act (18 CFR 157.205 and 157.211) for authorization to construct and operate new metering and associated appurtenant facilities in North Dakota, under Williston Basin's blanket certificate issued in Docket No. CP82–487–000 pursuant to Section 7 of the Natural Gas Act, all as more fully set forth in the request that is on file with the Commission and open to public inspection.

The proposed facilities will be used to provide delivery of transportation service gas to Bear Paw Energy, Inc. (Bear Paw). Williston Basin states that Bear Paw has requested installation of this metering facility to allow Williston Basin to make deliveries of up to 714 Mcf per day to be used to fuel a field compressor. The facilities to be constructed at the proposed metering facility will consist of a meter, regulator and miscellaneous piping, gauges and values, all of which will be enclosed within a small pipe fence. The proposed metering facility will be constructed on existing pipeline right-of-way at the terminus of Williston Basin's 6-inch True Oil lateral line in Section 26, T154N, R102W, Williams County, North Dakota. The estimated cost is $6,600 and 100% reimbursable by Bear Paw. The addition of the proposed facilities will have no significant effect on Williston Basin's peak day or annual requirements and the total volumes delivered will not exceed total volumes authorized prior to this request. Williston Basin also states that its existing tariff does not prohibit the addition of new delivery points and that there is sufficient capacity to accomplish deliveries without detriment or disadvantage to its other customers.

Any person or the Commission's staff may, within 45 days after issuance of the instant notice by the Commission, file pursuant to Rule 214 of the Commission's Procedural Rules (18 CFR 385.214) a motion to intervene or notice of intervention and pursuant to Section 157.205 of the Regulations under the Natural Gas Act (18 CFR 157.205) a protest to the request. If no protest is filed within the time allowed therefor, the proposed activity shall be deemed to be authorized effective the day after the time allowed for filing a protest. If a protest is filed and not withdrawn within 30 days after the time allowed for filing a protest, the instant request shall be treated as an application for authorization pursuant to Section 7 of the Natural Gas Act.

Lois D. Cashell,

Secretary.

[FR Doc. 97–25282 Filed 9–23–97; 8:45 am]

BILLING CODE 6717–01–M

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. EC97–54–000, et al.]

Soyland Power Cooperative, Inc., et al.; Electric Rate and Corporate Regulation Filings

September 17, 1997.

Take notice that the following filings have been made with the Commission:

1. Soyland Power Cooperative, Inc.

[Docket No. EC97–54–000]

Take notice that on September 10, 1997, Soyland Power Cooperative, Inc. (Soyland), tendered for filing with the Federal Energy Regulatory Commission an Application for Approval of Disposition of Jurisdictional Facilities. Soyland proposes to sell to Southwestern Electric Cooperative, Inc. (Southwestern), a non-jurisdictional distribution cooperative that has withdrawn from membership in Soyland, the metering facilities that served Southwestern.

Soyland states that a copy of the filing was served upon Southwestern.

Comment date: October 10, 1997, in accordance with Standard Paragraph E at the end of this notice.

2. Soyland Power Cooperative, Inc.

[Docket No. EC97–55–000]

Take notice that on September 19, 1997, Soyland Power Cooperative, Inc. (Soyland), tendered for filing with the Federal Energy Regulatory Commission an application for Approval of Disposition of Jurisdictional Facilities. Soyland proposed to sell to Corn Belt Electric Cooperative Inc. (Corn Belt), a non-jurisdictional distribution cooperative that has withdrawn from fill membership in Soyland, the metering facilities that served Corn Belt.

Soyland states that a copy of the filing was served upon Corn Belt.

Comment date: October 10, 1997, in accordance with Standard Paragraph E at the end of this notice.

3. Indeck North American Power Fund, L.P.

[Docket Nos. EL97–55–000; QF93–29–005; QF92–166–006; and QF92–167–006]

Take notice that on August 22, 1997, Indeck North American Power Fund,

L.P., Indeck Auburndale and Indeck Gordonsville (collectively Indeck) tendered for filing a Petition for Declaratory Order Concerning the Qualifying Status of the Auburndale and Gordonsville Cogeneration facilities. Indeck contends that the proposed exercise of a contractual option by Edison Mission Energy Company and its affiliates (Edison Mission) to designate a third-party purchaser for non-utility interests in those facilities in place of Indeck would violate the Commission's qualifying facility ownership requirements. Indeck seeks an Order declaring the exercise of the option as proposed would violate the Public Utilities Regulatory Policies Act (PURPA) and Commission provisions concerning ownership of qualifying cogeneration facilities. Indeck also seeks a declaration that Edison Mission's exercise of the option will cause the Auburndale and Gordonsville Cogeneration facilities to lose their qualifying status.

Comment date: October 2, 1997, in accordance with Standard Paragraph E at the end of this notice.

4. The Cities of Anaheim and Riverside, California v. Deseret Generation & Transmission Cooperative

[Docket No. EL97–57–000]

Take notice that on September 2, 1997, The Cities of Anaheim and Riverside, California (Cities) tendered for filing a complaint against Deseret Generation & Transmission Cooperative. The Cities request that the Commission: (1) Rule that the rates Deseret charges the Cities under FERC-jurisdictional contracts are unjust, unreasonable, unduly discriminatory and unduly preferential, (2) rule that the contracts are contrary to the public interest, (3) establish a refund effective date no later than November 1, 1997, and (4) determine the just and reasonable rates to be thereafter observed.

Comment date: October 17, 1997, in accordance with Standard Paragraph E at the end of this notice. Answers to the complaint shall be due on or before October 17, 1997.

5. Rayburn Country Electric Cooperative, Inc.

[Docket No. ER97–1903–000]

Take notice that Rayburn Country Electric Cooperative, Inc., tendered for filing on September 5, 1997, an amendment in the above-referenced docket.

Comment date: October 1, 1997, in accordance with Standard Paragraph E at the end of this notice.

6. Cinergy Services, Inc.

[Docket No. ER97–2593–000]

Take notice that on August 26, 1997, Cinergy Services, Inc. (Cinergy), tendered for filing an amendment to the service agreement under Cinergy's Power Sales Standard Tariff (the Tariff) entered into between Cinergy and Montaup Electric Company.

Change the effective date to one day after the effective date of the modification to the Tariff.

Copies of the filing were served on Energy Services, Inc., Washington Utilities and Transportation Commission, the Kentucky Public Service Commission, the Public Utilities Commission of Ohio and the Indiana Utility Regulatory Commission.

Comment date: September 30, 1997, in accordance with Standard Paragraph E at the end of this notice.

7. Cleveland Electric Illuminating Company

[Docket No. ER97–3597–000]

Take notice that on August 20, 1997, Cleveland Electric Illuminating Company tendered for filing an amendment in the above-referenced docket.

Comment date: September 30, 1997, in accordance with Standard Paragraph E at the end of this notice.

8. Great Bay Power Corporation

[Docket No. ER97–3890–000]

Take notice that on August 18, 1997, Great Bay Power Corporation tendered for filing a revised summary of activity for the quarter ending June 30, 1997.

Comment date: September 30, 1997, in accordance with Standard Paragraph E at the end of this notice.

9. Sigma Energy, Inc.

[Docket No. ER97–4145–000]

Take notice that on August 28, 1997, Sigma Energy, Inc., tendered for filing an amendment in the above-referenced docket.

Comment date: September 30, 1997, in accordance with Standard Paragraph E at the end of this notice.

10. 3E Energy Services, L.L.C.

[Docket No. ER97–4183–000]

Take notice that on September 11, 1997, 3E Energy Services, LLC (3E) filed an amendment to its application for market-based rates as power marketer. The amended information makes correction to the application relevant to: (1) Removal of natural gas, (2) removal to any indication of affiliates to 3E, (3) includes owner names.

Comment date: October 1, 1997, in accordance with Standard Paragraph E at the end of this notice.

11. Interstate Power Company

[Docket No. ER97–4355–000]

Take notice that on August 26, 1997, Interstate Power Company (IPW) tendered for filing a Transmission Service Agreement between IPW and MidCon Power Services Corporation (MidCon). Under the Transmission Service Agreement, IPW will provide non-firm point-to-point transmission service to MidCon.

Comment date: September 30, 1997, in accordance with Standard Paragraph E at the end of this notice.

12. Cinergy Services, Inc.

[Docket No. ER97–4371–000]

Take notice that on August 27, 1997, Cinergy Services, Inc. (Cinergy), tendered for filing a service agreement under Cinergy's Open Access Transmission Service Tariff (the Tariff) entered into between Cinergy and Northern Indiana Public Service Company (NIPSCO).

Cinergy and NIPSCO are requesting an effective date of July 29, 1997.

Comment date: October 1, 1997, in accordance with Standard Paragraph E at the end of this notice.

13. Cinergy Services, Inc.

[Docket No. ER97–4372–000]

Take notice that on August 27, 1997, Cinergy Services, Inc. (Cinergy), tendered for filing a service agreement under Cinergy's Open Access Transmission Service Tariff (the Tariff) entered into between Cinergy and Vitol Gas & Electric L.L.C. (Vitol).

Cinergy and Vitol are requesting an effective date of August 15, 1997.

Comment date: October 1, 1997, in accordance with Standard Paragraph E at the end of this notice.

14. New England Power Company

[Docket No. ER97–4373–000]

Take notice that on August 27, 1997, New England Power Company filed a Service Agreements and Certificates of Concurrence with Tractebel Energy Marketing, Inc., under NEP's FERC Electric Tariff, Original Volume No. 5.

Comment date: October 1, 1997, in accordance with Standard Paragraph E at the end of this notice.

15. ProMark Energy, Inc.

[Docket No. ER97–4374–000]

Take notice that on August 27, 1997, ProMark Energy, Inc., tendered for filing with the Federal Energy Regulatory Commission an executed Service

Agreement between ProMark Energy, Inc., and Long Island Lighting Company under ProMark's Market-Based Rate Tariff.

ProMark Energy, Inc. requests an effective date of August 28, 1997.

Comment date: October 1, 1997, in accordance with Standard Paragraph E at the end of this notice.

16. UtiliCorp United Inc.

[Docket No. ER97–4375–000]

Take notice that on August 27, 1997, UtiliCorp United Inc. (UtiliCorp), filed service agreements with ConAgra Energy Services, Inc., for service under its non-firm point-to-point open access service tariff for its operating divisions, Missouri Public Service, WestPlains Energy-Kansas and WestPlains Energy-Colorado.

Comment date: October 1, 1997, in accordance with Standard Paragraph E at the end of this notice.

17. UtiliCorp United Inc.

[Docket No. ER97–4376–000]

Take notice that on August 27, 1997, UtiliCorp United Inc. (UtiliCorp), filed service agreements with Constellation Power Source, Inc., for service under its non-firm point-to-point open access service tariff for its operating divisions, Missouri Public Service, WestPlains Energy-Kansas and WestPlains Energy-Colorado.

Comment date: October 1, 1997, in accordance with Standard Paragraph E at the end of this notice.

18. UtiliCorp United Inc.

[Docket No. ER97–4377–000]

Take notice that on August 27, 1997, UtiliCorp United Inc. (UtiliCorp), filed service agreements with The Energy Authority, Inc., for service under its non-firm point-to-point open access service tariff for its operating divisions, Missouri Public Service and WestPlains Energy-Kansas.

Comment date: October 1, 1997, in accordance with Standard Paragraph E at the end of this notice.

19. PECO Energy Company

[Docket No. ER97–4378–000]

Take notice that on August 27, 1997, PECO Energy Company (PECO) filed a Service Agreement dated August 25, 1997 with Horizon Energy, a wholly-owned affiliate of PECO (Horizon) under PECO's FERC Electric Tariff Original Volume No. 1 (Tariff). The Service Agreement adds Horizon as a customer under the Tariff.

PECO requests the Commission to waive the 60-day notice requirement and an effective date of October 1, 1997, for the Service Agreement, or alternatively, an effective date 60 days from the date of this filing.

PECO states that copies of this filing have been supplied to Horizon and to the Pennsylvania Public Utility Commission.

Comment date: October 1, 1997, in accordance with Standard Paragraph E at the end of this notice.

20. Public Service Co. of Oklahoma Southwestern Electric Power Company

[Docket No. ER97–4379–000]

Take notice that on August 27, 1997, Public Service Company of Oklahoma (PSO) and Southwestern Electric Power Company (SWEPCO) each tendered for filing Service Agreements establishing Texas-New Mexico Power Company as a customer under the terms of PSO and SWEPCO's respective CSRT–1 Tariff.

PSO and SWEPCO request an effective date of August 14, 1997, for the service agreements and, accordingly, seek waiver of the Commission's notice requirements. Copies of this filing were served on the new customer, the Oklahoma Corporation Commission and the Public Utility Commission of Texas.

Comment date: October 1, 1997, in accordance with Standard Paragraph E at the end of this notice.

21. Central Power and Light Company, West Texas Utilities Company Public, Service Company of Oklahoma, Southwestern Electric Power Company

[Docket No. ER97–4380–000]

Take notice that on August 27, 1997, Central Power and Light Company (CPL), West Texas Utilities Company (WTU), Public Service Company of Oklahoma (PSO) and Southwestern Electric Power Company (SWEPCO) (collectively, the CSW Operating Companies) submitted for filing service agreements under which the CSW Operating Companies will provide transmission and ancillary services to Brazos Electric Power Cooperative, Inc. (Brazos), Tenaska Power Services Company (Tenaska), Kansas City Power & Light Company (KCPL) and Southwestern Public Service Company (SPS) in accordance with the CSW Operating Companies' open access transmission service tariff.

The CSW Operating Companies state that a copy of this filing has been served Brazos, KCPL, SPS and Tenaska.

Comment date: October 1, 1997, in accordance with Standard Paragraph E at the end of this notice.

22. Central Illinois Light Company

[Docket No. ER97–4382–000]

Take notice that on August 28, 1997, Central Illinois Light Company (CILCO), 300 Liberty Street, Peoria, Illinois 61602, tendered for filing with the Commission a substitute Index of Point-To-Point Transmission Service Customers under its Open Access Transmission Tariff and service agreements for three new customers.

CILCO requested an effective date of August 6, 1997.

Copies of the filing were served on the affected customers and the Illinois Commerce Commission.

Comment date: October 1, 1997, in accordance with Standard Paragraph E at the end of this notice.

23. Pacific Gas and Electric Company

[Docket No. ER97–4383–000]

Take notice that on August 28, 1997, Pacific Gas and Electric Company (PG&E), tendered for filing revised tariff pages for PG&E Rate Schedule FERC Nos. 88, 91, 136, 138 and 176 with the Sacramento Municipal Utility District (SMUD), PG&E Rate Schedule FERC No. 142 with the Northern California Power Agency (NCPA), PG&E Rate Schedule FERC No. 147 with the Western Area Power Administration (WAPA) and the U.S. Department of Energy, San Francisco Field Office (DOE/SF) on behalf of the Lawrence Livermore Laboratory and itself, and PG&E Rate Schedule FERC No. 149 with Lassen Municipal Utility District (Lassen). The filing is in response to the Commission's July 16, 1997, Order Approving Disposition of Jurisdictional Facilities and Indirect Merger of Jurisdictional Facilities and Accepting for Filing Proposed Changes to Market-Based Rate Schedule in FERC Docket Nos. EC97–22–000 and ER97–1847–000, 80 FERC ¶ 61,041. In this Order the Commission directed PG&E to file, within thirty days of the closing of the merger approved in the Order, revisions to any customer's rate schedule that contains an Annual Transmission Rate Adjustment Factor (ATRAF) mechanism. Those changes are intended to incorporate certain ratepayer protections and add language which clearly permits the customer to protest and challenge rate changes under the ATRAF. PG&E is requesting any necessary waivers.

Copies of this filing have been served upon the California Public Utilities Commission, SMUD, NCPA, WAPA–DOE/SF and Lassen.

Comment date: October 1, 1997, in accordance with Standard Paragraph E at the end of this notice.

24. Additional Signatory to PJM Interconnection, L.L.C. Operating Agreement

[Docket No. ER97–4384–000]

Take notice that on August 27, 1997, the PJM Interconnection, L.L.C. (PJM) filed, on behalf of the Members of the LLC, membership application of Coral Power., L.L.C. and DuPont Power Marketing Inc. PJM requests an effective date of August 27, 1997.

Comment date: October 1, 1997, in accordance with Standard Paragraph E at the end of this notice.

25. Duke Power Company

[Docket No. ER97–4385–000]

Take notice that on August 28, 1997, Duke Power Company (Duke), tendered for filing a Transmission Service Agreement between Duke, on its own behalf and acting as agent for its wholly-owned subsidiary, Nantahala Power and Light Company, and PECO Energy Company (Transmission Customer), dated as of July 30, 1997 (TSA). Duke states that the TSA sets out the transmission arrangements under which Duke will provide the Transmission Customer firm point-to-point transmission service under Duke's Pro Forma Open Access Transmission Tariff. Duke requests that the Agreement be made effective as of July 30, 1997.

Comment date: October 1, 1997, in accordance with Standard Paragraph E at the end of this notice.

26. Duke Power Company

[Docket No. ER97–4386–000]

Take notice that on August 28, 1997, Duke Power Company (Duke), tendered for filing a Transmission Service Agreement between Duke, on its own behalf and acting as agent for its wholly-owned subsidiary, Nantahala Power and Light Company, and Constellation Power Source, Inc. (Transmission Customer), dated as of August 4, 1997 (TSA). Duke states that the TSA sets out the transmission arrangements under which Duke will provide the Transmission Customer non-firm point-to-point transmission service under Duke's Pro Forma Open Access Transmission Tariff. Duke requests that the Agreement be made effective as of August 4, 1997.

Comment date: October 1, 1997, in accordance with Standard Paragraph E at the end of this notice.

27. Arizona Public Service Company

[Docket No. ER97–4387–000]

Take notice that on August 28, 1997, Arizona Public Service Company (APS), tendered for filing a Service Agreement to provide Non-Firm Point-to-Point Transmission Service under APS' Open Access Transmission Tariff with Kansas City Power & Light Co.

A copy of this filing has been served on Kansas City Power & Light Co., and the Arizona Corporation Commission.

Comment date: October 1, 1997, in accordance with Standard Paragraph E at the end of this notice.

28. Arizona Public Service Company

[Docket No. ER97–4388–000]

Take notice that on August 28, 1997, Arizona Public Service Company (APS), tendered for filing Service Agreements under APS' FERC Electric Tariff, Original Volume No. 3 with Cajun Electric Power Coop. (Cajun), Delhi Energy Services, Inc. (Delhi), British Columbia Power Exchange Corporation (PowerEx), and Cook Inlet Energy Supply (Cook).

A copy of this filing has been served on the Arizona Corporation Commission, Cajun, Delhi, PowerEx, and Cook.

Comment date: October 1, 1997, in accordance with Standard Paragraph E at the end of this notice.

29. Southern Company Services, Inc.

[Docket No. ER97–4389–000]

Take notice that on August 28, 1997, Southern Company Services, Inc. (SCSI), acting on behalf of Alabama Power Company, Georgia Power Company, Gulf Power Company, Mississippi Power Company and Savannah Electric and Power Company (collectively referred to as Southern Companies) filed one (1) service agreement under Southern Companies' Market-Based Rate Power Sales Tariff (FERC Electric Tariff, Original Volume No. 4) with the following entity: North American Energy Conservation, Inc. SCSI states that the service agreement will enable Southern Companies to engage in short-term market-based rate transactions with this entity.

Comment date: October 1, 1997, in accordance with Standard Paragraph E at the end of this notice.

30. Florida Power Corporation

[Docket No. ER97–4573–000]

Take notice that on September 10, 1997, Florida Power Corporation tendered for filing an amendment to its open access transmission tariff that modifies the rates and charges for transmission service and ancillary services.

Comment date: September 30, 1997, in accordance with Standard Paragraph E at the end of this notice.

31. Central Illinois Light Company

[Docket No. OA96–36–002]

Take notice that on September 2, 1997, Central Illinois Light Company (CILCO) tendered for filing with the Commission a letter addressing compliance with the Commission's July 31, 1997, order.

Copies of this filing were served on the affected customers and the Illinois Commerce Commission.

Comment date: September 30, 1997, in accordance with Standard Paragraph E at the end of this notice.

32. Citizens Utilities Company

[Docket No. OA97–610–000]

Take notice that on July 3, 1997, Citizens Utilities Company tendered for filing a Supplemental Request for Limited Waiver in the above-referenced docket.

Comment date: September 30, 1997, in accordance with Standard Paragraph E at the end of this notice.

33. Saluda River Electric Cooperative, Inc.

[Docket No. OA97–711–000]

Take notice that on August 12, 1997, Saluda River Electric Cooperative, Inc., tendered for filing a request for waiver of the reciprocity requirements of Order Nos. 888 and 889.

Comment date: September 30, 1997, in accordance with Standard Paragraph E at the end of this notice.

34. Allegheny Power Service Corp. on Behalf of Monongahela Power Company; The Potomac Edison Company; West Penn Power Company; (Allegheny Power)

[Docket No. OA97–712–00o]

Take notice that on August 22, 1997, Monongahela Power Company, The Potomac Edison Company and West Penn Power Company (Allegheny Power) filed a revised *pro forma* open access transmission tariff to comply with Orders Nos. 888–A and 889–A. Allegheny Power requests a May 13, 1997, effective date.

Copies of the filing have been provided to the Public Utilities Commission of Ohio, the Pennsylvania Public Utility Commission, the Virginia State Corporation Commission, the West Virginia Public Service Commission, and all affected parties.

Comment date: September 30, 1997, in accordance with Standard Paragraph E at the end of this notice.

35. Washington Water Power Company

[Docket No. OA97–713–000]

Take notice that on August 18, 1997, Washington Water Power Company

(WWP), tendered for filing a Certificate of Concurrence for use in connection with WWP's FERC Electric Tariff First Revised Volume No. 9.

WWP states that the Certificate of Concurrence form will be used for exchanges under Service Schedule D of Volume No. 9 to unbundle transmission and ancillary services.

Copies of the filing were sent to each purchaser under the Index of Purchasers.

Comment date: September 30, 1997, in accordance with Standard Paragraph E at the end of this notice.

36. Washington Water Power Company

[Docket No. OA97–714–000]

Take notice that on August 18, 1997, Washington Water Power Company (WWP) tendered for filing a Certificate of Concurrence for use in connection with WWP's FERC Electric Tariff First Revised Volume No. 4.

WWP states that the Certificate of Concurrence form will be used for exchanges under Service Schedule D of Volume No. 4 to unbundle transmission and ancillary services. WWP also submitted thermal project fixed cost ceiling under Volume No. 4 current rates to reflect unbundling of transmission and ancillary services.

Comment date: September 30, 1997, in accordance with Standard Paragraph E at the end of this notice.

37. Idaho County Light & Power Cooperative Association, Inc.

[Docket No. OA97–717–000]

Take notice that on September 2, 1997, Idaho County Light & Power Cooperative Association Inc. (Idaho County), filed a request for waiver of the requirements of Order No. 888 and Order No. 889 pursuant to 18 CFR 35.28(d) of the Federal Energy Regulatory Commission's Regulations. Idaho County's filing is available for public inspection at its offices in Lucile, Idaho.

Comment date: October 1, 1997, in accordance with Standard Paragraph E at the end of this notice.

38. Public Service Company of New Mexico

[Docket No. OA97–720–000]

Take notice that on September 8, 1997, Public Service Company of New Mexico (PNM) submitted for filing pursuant to Order Nos. 889 and 889–A its amended Standards of Conduct. PNM also posted its Standards of Conduct on its Open Access Same-time Information System (OASIS). PNM's Standards of Conduct are also available for public inspection during regular business hours at its offices in Albuquerque, New Mexico.

Comment date: October 2, 1997, in accordance with Standard Paragraph E at the end of this notice.

Standard Paragraph

E. Any person desiring to be heard or to protest said filing should file a motion to intervene or protest with the Federal Energy Regulatory Commission, 888 First Street, N.E., Washington, D.C. 20426, in accordance with Rules 211 and 214 of the Commission's Rules of Practice and Procedure (18 CFR 385.211 and 18 CFR 385.214). All such motions or protests should be filed on or before the comment date. Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceeding. Any person wishing to become a party must file a motion to intervene. Copies of this filing are on file with the Commission and are available for public inspection.

Lois D. Cashell,

Secretary.

[FR Doc. 97–25329 Filed 9–23–97; 8:45 am]

BILLING CODE 6717–01–P

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Docket No. ER97–4390–000, et al.]

Tampa Electric Company, et al.; Electric Rate and Corporate Regulation Filings

September 18, 1997.

Take notice that the following filings have been made with the Commission:

1. Tampa Electric Company

[Docket No. ER97–4390–000]

Take notice that on August 28, 1997, Tampa Electric Company (Tampa Electric), tendered for filing a Contract for the Purchase and Sale of Power and Energy (Contract) between Tampa Electric and Sonat Power Marketing L.P. (Sonat). The Contract provides for the negotiation of individual transactions in which Tampa Electric will sell power and energy to Sonat.

Tampa Electric proposes an effective date of September 1, 1997 for the Contract, or, if the Commission's notice requirement cannot be waived, the earlier of October 27, 1997 or the date the Contract is accepted for filing.

Copies of the filing have been served on Sonat and the Florida Public Service Commission.

Comment date: October 2, 1997, in accordance with Standard Paragraph E at the end of this notice.

2. PacifiCorp

[Docket No. ER97–4391–000]

Take notice that on August 28, 1997, PacifiCorp, tendered for filing in accordance with 18 CFR Part 35 of the Commission's Rules and Regulations, Non-Firm Transmission Service Agreement with Constellation Power Sources, Inc. (''Constellation''), Magnesium Corporation of America (''MCA'') and NP Energy Inc. and Short-Term Firm Transmission Service Agreements with Constellation and MCA under PacifiCorp's FERC Electric Tariff, First Revised Volume No. 11.

Copies of this filing were supplied to the Washington Utilities and Transportation Commission and the Public Utility Commission of Oregon.

A copy of this filing may be obtained from PacifiCorp's Regulatory Administration Department's Bulletin Board System through a personal computer by calling (503) 464–6122 (9600 baud, 8 bits, no parity, 1 stop bit).

Comment date: October 2, 1997, in accordance with Standard Paragraph E at the end of this notice.

3. Western Resources, Inc.

[Docket No. ER97–4392–000]

Take notice that on August 28, 1997, Western Resources, Inc. tendered for filing a firm transmission agreement between Western Resources and Western Resources Generation Services. Western Resources states that the purpose of the agreement is to permit non-discriminatory access to the transmission facilities owned or controlled by Western Resources in accordance with Western Resources' open access transmission tariff on file with the Commission. The agreement is proposed to become effective August 14, 1997.

Copies of the filing were served upon Western Resources Generation Services and the Kansas Corporation Commission.

Comment date: October 2, 1997, in accordance with Standard Paragraph E at the end of this notice.

4. Pacific Gas and Electric Company

[Docket No. ER97–4393–000]

Take notice that on August 28, 1997, Pacific Gas and Electric Company (PG&E) tendered for filing: 1) an agreement dated July 31, 1997, by and between PG&E and the San Francisco Bay Area Rapid Transit District (BART) entitled ''Service Agreement for Firm Point-to-Point Transmission Service'' (Service Agreement); and 2) a request for termination of this Service Agreement.

The Service Agreement was entered into for the purpose of providing firm point-to-point transmission service for 70 MW of power delivered to BART. The effective date of termination is the requested date shown below.

Service agreement date	Term	Requested effective date for termination
July 31, 1997—Service Agreement No. _____ under FERC Electric Tariff, Original Volume No. _____.	August 1, 1997 through December 31, 1997.	The later of December 31, 1997 or the date direct access is available but in no event shall the Service Agreement go beyond June 30, 1998, unless so ordered by the Commission.

Copies of this filing have been served upon the California Public Utilities Commission and BART.

Comment date: October 2, 1997, in accordance with Standard Paragraph E at the end of this notice.

5. Long Island Lighting Company

[Docket No. ER97–4394–000]

Take notice that on August 28, 1997, Long Island Lighting Company (''LILCO'') filed Electric Power Service Agreements entered into as of the following dates by LILCO and the following parties:

Date	Purchaser
March 22, 1996	The Cincinnati Gas & Electric Company, an Ohio corporation, PSI Energy, Inc., an Indiana corporation (collectively Cinergy Operating Companies) and Cinergy Services, Inc., a Delaware corporation, as agent for and on behalf of the Cinergy Operating Companies.
April 1, 1996	Coral Power, L.L.C.
May 10, 1996	Noram Energy Services, Inc.
May 10, 1996	TransCanada Power Corp.
June 26, 1996	AIG Trading Corporation
July 10, 1996	Pan Energy Power Services, Inc.
July 31, 1996	Atlantic City Electric.
September 4, 1996	Energy Transfer Group, L.L.C.
September 4, 1996	Federal Energy Sales, Inc.
September 23, 1996	Dupont Power Marketing Inc.
October 10, 1996	Baltimore Gas and Electric Company.
October 22, 1996	Power Company of America, L.P.
December 19, 1996	Plum Street Energy Marketing, Inc.
January 3, 1997	Commonwealth Electric Company.
January 17, 1997	Western Power Services, Inc.
March 14, 1997	SONAT Power Marketing L.P.
April 15, 1997	Williams Energy Services Company.
May 23, 1997	Entergy Power Marketing Corp.
June 10, 1997	ProMark Energy.
June 11, 1997	Orange & Rockland Utilities, Inc.
June 11, 1997	PacifiCorp Power Marketing, Inc.
July 2, 1997	Central Maine Power Company.
August 19, 1997	Tractebel Energy Marketing, Inc.

The Electric Power Service Agreements listed above were entered into under LILCO's Power Sales Umbrella Tariff accepted for filing on April 4, 1996 and made effective as of August 11, 1995 by the Commission in Docket No. ER95–1518–000. Services to be provided under these Electric Power Service Agreements will be pursuant to the rates, terms and conditions of LILCO's Power Sales Umbrella Tariff.

LILCO requests waiver of the Commission's sixty (60) day notice requirements and an effective date of August 1, 1997 for the Electric Power Service Agreements listed above because in accordance with the policy announced in *Prior Notice and Filing Requirements Under Part II of the Federal Power Act,* 64 FERC ¶ 61,139, *clarified and reh'g granted in part and denied in part,* 65 FERC ¶ 61,081 (1993), service will be provided under an umbrella tariff and each Electric Power Service Agreement is being filed either prior to or within thirty (30) days of the commencement of service. LILCO has served copies of this filing to the customers which are a party to each of the Electric Power Service Agreements and to the New York State Public Service Commission.

Comment date: October 2, 1997, in accordance with Standard Paragraph E at the end of this notice.

6. Idaho Power Company

[Docket No. ER97–4395–000]

Take notice that on August 28, 1997, Idaho Power Company (IPC), tendered for filing with the Federal Energy Regulatory Commission Service Agreements under Idaho Power Company FERC Electric Tariff No. 6, Market Rate Power Sales Tariff, between Idaho Power Company and Emerald Peoples Utility District.

Comment date: October 2, 1997, in accordance with Standard Paragraph E at the end of this notice.

7. Southern Indiana Gas and Electric Company

[Docket No. ER97–4396–000]

Take notice that on August 28, 1997, Southern Indiana Gas and Electric Company (''SIGECO''), tendered for filing two (2) service agreements for market based rate power sales under its Market Based Rate Tariff with the following entities:

1. Commonwealth Edison Company
2. Western Resources, Inc.

Copies of the filing were served upon each of the parties to the service agreements.

Comment date: October 2, 1997, in accordance with Standard Paragraph E at the end of this notice.

8. New York State Electric & Gas Corporation

[Docket No. ER97–4397–000]

Take notice that on August 28, 1997, New York State Electric & Gas Corporation (NYSEG), tendered for filing pursuant to Part 35 of the Federal Energy Regulatory Commission's Rules of Practice and Procedure, 18 CFR 35 (1996), service agreements under which NYSEG may provide capacity and/or energy to AIG Trading Corporation (AIG), Chicopee Municipal Lighting Plant (Chicopee), Entergy Power Marketing Corp. (Entergy), PacifiCorp Power Marketing, Inc. (PPM), and TransCanada Energy Ltd. (TransCanada)(collectively, the Purchasers) in accordance with NYSEG's FERC Electric Tariff, Original Volume No. 1.

NYSEG has requested waiver of the notice requirements so that the service agreements with Chicopee, Entergy, PPM, and TransCanada become effective as of August 29, 1997 and the service agreement with AIG becomes effective as of August 1, 1997.

NYSEG has served copies of the filing upon the New York State Public Service Commission, Chicopee, Entergy, PPM, TransCanada, and AIG.

Comment date: October 2, 1997, in accordance with Standard Paragraph E at the end of this notice.

9. Pennsylvania Power & Light Company

[Docket No. ER97–4398–000]

Take Notice that on August 28, 1997, Pennsylvania Power & Light Company (''PP&L''), filed a Service Agreement dated May 27, 1997 with American Electric Power Service Corporation (American) under PP&L's FERC Electric Tariff, Original Volume No. 1. The Service Agreement adds American as an eligible customer under the Tariff.

PP&L requests an effective date of August 28, 1997, for the Service Agreement.

PP&L states that copies of this filing have been supplied to American and to the Pennsylvania Public Utility Commission.

Comment date: October 2, 1997, in accordance with Standard Paragraph E at the end of this notice.

10. Wisconsin Electric Power Company

[Docket No. ER97–4399–000]

Take notice that on August 28, 1997, Wisconsin Electric Power Company (Wisconsin Electric), tendered for filing an electric service agreement under its Coordination Sales Tariff (FERC Electric Tariff, Original Volume No. 2). Wisconsin Electric respectfully requests an effective date of sixty days from the date of filing. Wisconsin Electric is authorized to state that Western Resources, Inc. (WRI) joins in the requested effective date.

Copies of the filing have been served on WRI, the Michigan Public Service Commission, and the Public Service Commission of Wisconsin.

Comment date: October 2, 1997, in accordance with Standard Paragraph E at the end of this notice.

11. Tucson Electric Power Company

[Docket No. ER97–4400–000]

Take notice that on August 28, 1997, Tucson Electric Power Company (TEP), tendered for filing two (2) service agreements for firm point-to-point transmission service under Part II of its Open Access Transmission Tariff filed in Docket No. OA96–140–000. TEP requests waiver of notice to permit the service agreements to become effective as of the earliest date service commenced under these agreements. The service agreements are as follows:

1. Service Agreement for Firm Point-to-Point Transmission Service with Enron Power Marketing, Inc. dated August 5, 1997.

2. Service Agreement for Firm Point-to-Point Transmission Service with Salt River Project dated August 5, 1997.

Comment date: October 2, 1997, in accordance with Standard Paragraph E at the end of this notice.

12. South Carolina Electric & Gas Company

[Docket No. ER97–4401–000]

Take notice that on August 28, 1997, South Carolina Electric & Gas Company (SCE&G) submitted service agreements establishing Constellation Power Source, Inc. (CPS), CMS Marketing, Services and Trading Company (CMS), American Energy Solutions, Inc. (AES), Illinois Power Company (IPC), and NP Energy, Inc. (NP) as customers under the terms of SCE&G's Open Access Transmission Tariff.

SCE&G requests an effective date of one day subsequent to the filing of the service agreements. Accordingly, SCE&G requests waiver of the Commission's notice requirements. Copies of this filing were served upon CPS, CMS, AES, IPC, NP, and the South Carolina Public Service Commission.

Comment date: October 2, 1997, in accordance with Standard Paragraph E at the end of this notice.

13. Southwestern Electric Power Company

[Docket No. ER97–4402–000]

Take notice that on August 28, 1997, Southwestern Electric Power Company (''SWEPCO'') submitted for filing an Amended and Restated Power Supply Agreement between SWEPCO and Northeast Texas Electric Cooperative, Inc. (''NTEC''). The Restated PSA provides NTEC with increased operational flexibility.

SWEPCO seeks an effective date of January 1, 1997, and, accordingly, seeks waiver of the Commission's notice requirements. SWEPCO served copies of the filing on NTEC and the Public Utility Commission of Texas.

Comment date: October 2, 1997, in accordance with Standard Paragraph E at the end of this notice.

14. Entergy Services, Inc.

[Docket No. ER97–4403–000]

Take notice that on August 29, 1997, Entergy Services, Inc. (Entergy Services), on behalf of Entergy Arkansas, Inc., Entergy Gulf States, Inc., Entergy Louisiana, Inc., Entergy Mississippi, Inc., and Entergy New Orleans, Inc. (collectively, the Entergy Operating Companies), tendered for filing a Short-Term Firm Point-To-Point Transmission Service Agreement between Entergy Services, as agent for the Entergy Operating Companies, and Entergy Power, Inc.

Comment date: October 2, 1997, in accordance with Standard Paragraph E at the end of this notice.

15. Entergy Services, Inc.

[Docket No. ER97–4404–000]

Take notice that on August 29, 1997, Entergy Services, Inc. (Entergy Services), on behalf of Entergy Arkansas, Inc., Entergy Gulf States, Inc., Entergy Louisiana, Inc., Entergy Mississippi, Inc., and Entergy New Orleans, Inc. (collectively, the Entergy Operating Companies), tendered for filing a Non-Firm Point-To-Point Transmission Service Agreement between Entergy Services, as agent for the Entergy Operating Companies, and Entergy Power, Inc.

Comment date: October 2, 1997, in accordance with Standard Paragraph E at the end of this notice.

16. Entergy Services, Inc.

[Docket No. ER97–4405–000]

Take notice that on August 29, 1997, Entergy Services, Inc. (Entergy Services), on behalf of Entergy Arkansas, Inc., Entergy Gulf States, Inc., Entergy Louisiana, Inc., Entergy Mississippi, Inc., and Entergy New Orleans, Inc. (collectively, the Entergy Operating Companies), tendered for filing a Short-Term Firm Point-To-Point Transmission Service Agreement between Entergy Services, as agent for

the Entergy Operating Companies, and Entergy Power Marketing Corp.

Comment date: October 2, 1997, in accordance with Standard Paragraph E at the end of this notice.

17. The Detroit Edison Company

[Docket No. ER97–4406–000]

Take notice that on August 29, 1997, The Detroit Edison Company (Detroit Edison) tendered for filing a Service Agreement for wholesale power sales transactions (the Service Agreement) under Detroit Edison's Wholesale Power Sales Tariff (WPS–1), FERC Electric Tariff No. 4 (the WPS–1 Tariff), between Detroit Edison and American Energy Solutions, Inc., dated as of August 21, 1997. Detroit Edison requests that the Service Agreement be made effective as of August 21, 1997.

Comment date: October 2, 1997, in accordance with Standard Paragraph E at the end of this notice.

18. The Detroit Edison Company

[Docket No. ER97–4407–000]

Take notice that on August 29, 1997, The Detroit Edison Company (''Detroit Edison'') tendered for filing a Service Agreement for wholesale power sales transactions (the ''Service Agreement'') under Detroit Edison's Wholesale Power Sales Tariff (WPS–2), FERC Electric Tariff No. 3 (the ''WPS–2 Tariff''), between Detroit Edison and American Energy Solutions, Inc, dated as of August 21, 1997. Detroit Edison requests that the Service Agreement be made effective as of August 21, 1997.

Comment date: October 2, 1997, in accordance with Standard Paragraph E at the end of this notice.

19. Maine Electric Power Company

[Docket No. ER97–4517–000]

Take notice that on September 8, 1997, Maine Electric Power Company (''MEPCO'') submitted for filing: (1) A notice of Termination of the Participation Agreement and certain Supplements thereto between MEPCO and certain New England utilities or municipal power districts, and (2) a unexecuted First Amendment to Supplemental Participation Agreement among MEPCO, Bangor Hydro-Electric Company and Central Maine Power Company. MEPCO requests waiver of notice under 18 CFR 35.15 for an effective date of July 9, 1996.

Copies of this filing have been served upon each of the parties to the agreements.

Comment date: October 2, 1997, in accordance with Standard Paragraph E at the end of this notice.

Standard Paragraph

E. Any person desiring to be heard or to protest said filing should file a motion to intervene or protest with the Federal Energy Regulatory Commission, 888 First Street, N.E., Washington, D.C. 20426, in accordance with Rules 211 and 214 of the Commission's Rules of Practice and Procedure (18 CFR 385.211 and 18 CFR 385.214). All such motions or protests should be filed on or before the comment date. Protests will be considered by the Commission in determining the appropriate action to be taken, but will not serve to make protestants parties to the proceeding. Any person wishing to become a party must file a motion to intervene. Copies of this filing are on file with the Commission and are available for public inspection.

Lois D. Cashell,

Secretary.

[FR Doc. 97–25330 Filed 9–23–97; 8:45 am]

BILLING CODE 6717–01–P

DEPARTMENT OF ENERGY

Federal Energy Regulatory Commission

[Project No. 1494–139]

Grand River Dam Authority; Notice of Availability of Environmental Assessment

September 18, 1997.

An environmental assessment (EA) is available for public review. The EA is for an application for non-project use of project lands. The proposed action involves the construction of a golf course on approximately 145 acres of lands within the Pensacola Project boundary. The EA finds that approval of the proposed action would not constitute a major federal action significantly affecting the quality of the human environment. The proposed lease area is located immediately below the project dam, in Mayes County, Oklahoma.

The EA was written by staff in the Office of Hydropower Licensing, Federal Energy Regulatory Commission. Copies of the EA can be viewed at the Commission's Reference and Information Center, Room 2A, 888 First Street, NE., Washington, DC 20426. Copies can also be obtained by calling the project manager, Patti Pakkala at (202) 219–0025.

Lois D. Cashell,

Secretary.

[FR Doc. 97–25287 Filed 9–23–97; 8:45 am]

BILLING CODE 6717–01–M

DEPARTMENT OF ENERGY

Southwestern Power Administration

Notice of Robert D. Willis Proposed Power Rate Change

AGENCY: Southwestern Power Administration, DOE.

ACTION: Notice of Public Review and Comment Period.

SUMMARY: The Administrator, Southwestern, has prepared Current and Revised 1997 Power Repayment Studies for the Robert D. Willis (Willis) project which show the need for an increase in annual revenues required to meet cost recovery criteria. The increase in the revenues required was the result of an increase in estimated Operations and Maintenance costs by Corps of Engineers and the increased amount of large maintenance items estimated for Willis. The Administrator has also developed a proposed rate schedule for the isolated Willis project to recover the required revenues. The proposed rate for the Willis project would increase annual revenues approximately 13.5 percent from $266,928 to $302,928 beginning January 1, 1998.

DATES: The consultation and comment period will begin on the date of publication of this **Federal Register** and will end November 10, 1997.

1. Public Information Forum—October 2, 1997, 9:30 a.m., Central Time in Tulsa, OK
2. Public Comment Forum—October 29, 1997, 1:30 p.m., Central Time in Tulsa, OK

Southwestern is only conducting a 45 day public notice and comment period (10 CFR 903.14(d)) since the Willis project is considered a minor adjustment. In addition, this project has a single hydroelectric power customer and that customer has been notified of the proposed rate increase. It is anticipated that any comments from the customer or other interested parties will be developed well within the 45 day period provided.

ADDRESSES: The Forums will be held in Southwestern's offices, Suite 1600, Williams Center Tower I, One West Third Street, Tulsa, Oklahoma 74103. Ten copies of the written comments should be submitted to the Assistant Administrator, Southwestern Power Administration, U.S. Department of Energy, P.O. Box 1619, Tulsa, Oklahoma 74101–1619.

FOR FURTHER INFORMATION CONTACT: Mr. Forrest E. Reeves, Assistant Administrator, Office of Corporate Operations, Southwestern Power

Administration, U.S. Department of Energy, PO Box 1619, Tulsa, Oklahoma 74101, (918) 595–6696.

SUPPLEMENTARY INFORMATION: The U.S. Department of Energy was created by an Act of the U.S. Congress, through the Department of Energy Organization Act, Pub. L. 95–91, dated August 4, 1977, and Southwestern Power Administration's power marketing activities were transferred from the Department of the Interior to the Department of Energy, effective October 1, 1977.

Southwestern markets power from 24 multiple-purpose reservoir projects with power facilities constructed and operated by the U.S. Army Corps of Engineers. These projects are located in the States of Arkansas, Missouri, Oklahoma and Texas. Southwestern's marketing area includes these states plus Kansas and Louisiana. Of the total, 22 projects comprise an Integrated System and are interconnected through Southwestern's transmission system and exchange agreements with other utilities. The Sam Rayburn Dam project, located in eastern Texas, is not interconnected with Southwestern's Integrated System hydraulically, electrically, or financially. Instead, the power produced by the Sam Rayburn Dam project is marketed by Southwestern as an isolated project under a contract through which the customer purchases the entire power output of the project at the dam. The Willis project, located on the Neches River downstream from the Sam Rayburn Dam, consists of two 4,000 kilowatt hydroelectric generating units. It, like the Sam Rayburn Dam project, is marketed as an isolated project under a contract through which the customer, Sam Rayburn Municipal Power Agency (SRMPA), receives the entire output of the project. The SRMPA contract is for a period of 50 years as a result of SRMPA's funding the construction of the hydroelectric facilities at the project. A separate power repayment study is prepared for each project which has a special rate based on its isolated project determination.

Following Department of Energy Order Number RA 6120.2, the Administrator, Southwestern, prepared a current power repayment study for the Robert D. Willis project using the existing annual rate of $266,928. The study indicated that maintaining the current rate will create a revenue deficit for the project. This is primarily a result of the Corps of Engineers increase of estimated Operations and Maintenance cost of the Willis Project allocated from the Sam Rayburn Project. The Revised Power Repayment Study for the isolated Willis project shows that a increase of $36,000 (a 13.5 percent increase) annually will satisfy repayment criteria. This increase would change annual revenues produced by the Willis Project from $266,928 to $302,928 and satisfy the present financial criteria for repayment of the project.

Opportunity is presented for customers and interested parties to receive copies of the studies and proposed rate schedule for the Willis project. If you desire a copy of the Repayment Study Data Package for the Willis project, submit your request to: Mr. Forrest E. Reeves, Assistant Administrator, Office of Corporate Operations, PO Box 1619, Tulsa, OK 74101, (918) 595–6696.

A Public Information Forum is scheduled to be held October 2, 1997. The Forum is to explain to customers and interested parties the proposed rates and supporting studies. The Forum will be conducted by a chairman who will be responsible for orderly procedure. Questions concerning the rates, studies and information presented at the Forum may be submitted from interested persons and will be answered, to the extent possible, at the Forum. Questions not answered at the Forum will be answered in writing, except the questions involving voluminous data contained in Southwestern's records may best be answered by consultation and review of pertinent records at Southwestern's offices. Persons interested in attending the Public Information Forum should indicate in writing by 4 p.m., Central Time, Tuesday, September 30, 1997, their intent to appear at such Forum. Accordingly, if no one so indicates their intent to attend, no such Forum will be held.

A Public Comment Forum is scheduled to be held October 29, 1997. At the Public Comment Forum interested persons may submit written comments or make oral presentations of their views and comments. This Forum will also be conducted by a chairman who will be responsible for orderly procedure. Southwestern's representatives will be present, and they and the chairman may ask questions of speakers. The chairman may allow others to speak if time permits. Persons interested in attending or speaking at the Public Comment Forum should indicate in writing by 4 p.m., Central Time, Friday, October 24, 1997, their intent to appear at such Forum. Accordingly, if no one so indicates their intent to attend, no such Forum will be held.

A transcript of each Forum will be made. Copies of the transcripts may be obtained, for a fee, directly from the transcribing service. Copies of all documents introduced will be available from Southwestern upon request, also for a fee. Written comments on the proposed rates for the project are due on or before 45 days from publication. Written comments should be submitted to the Assistant Administrator, Southwestern Power Administration, U.S. Department of Energy, PO Box 1619, Tulsa, Oklahoma 74101.

Following review of the oral and written comments, the Administrator will submit the rate proposals and the Power Repayment Studies for the Willis project, in support of the proposed rates, to the Deputy Secretary of Energy for confirmation and approval on an interim basis and subsequently to the Federal Energy Regulatory Commission (FERC) for confirmation and approval on a final basis. The FERC will allow the public an opportunity to provide written comments on the proposed rate increases before making a final decision.

Issued in Tulsa, Oklahoma, this 15th day of September 1997.

Michael A. Deihl,

Administrator.

[FR Doc. 97–25334 Filed 9–23–97; 8:45 am]

BILLING CODE 6450–01–P

ENVIRONMENTAL PROTECTION AGENCY

[OPP–00496; FRL–5736–6]

Science Applications International Corp.; Transfer of Data

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice.

SUMMARY: This is a notice to certain persons who have submitted information to EPA in connection with pesticide information requirements imposed under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) or the Federal Food, Drug, and Cosmetic Act (FFDCA). Science Applications International Corp. (SAIC) has been awarded a contract to perform work for the EPA Office of Pesticide Programs, and will be provided access to certain information submitted to EPA under FIFRA and FFDCA. Some of this information may have been claimed to be confidential business information (CBI) by submitters. This information will be transferred to SAIC in accordance with the requirements of 40 CFR 2.307(h)(3) and 40 CFR 2.308(i)(2),

and will enable SAIC to fulfill the obligations of the contract.

DATES: SAIC will be given access to this information no sooner than September 29, 1997.

FOR FURTHER INFORMATION CONTACT: By mail: BeWanda Alexander, Information Resources and Services Division (7502C), Office of Pesticide Programs, Environmental Protection Agency, 401 M St., SW., Washington, DC 20460. Office location, telephone number, and e-mail address: Rm. 700N, Crystal Mall #2, 1921 Jefferson Davis Highway, Arlington, VA, (703) 305–5259, e-mail: alexander.bewanda@epamail.epa.gov.

SUPPLEMENTARY INFORMATION: Under Contract No. 68–D4–0098, work assignment number 317, SAIC will provide technical and scientific support to EPA evaluations of analytical methods and performance data for pesticide, and test analytical methods used in studies submitted to the Agency of the ecological effects, exposure, or environmental fate of pesticides.

The Office of Pesticide Programs has determined that access by SAIC to information on all pesticide products is necessary for the performance of the contract. Some of this information may be entitled to confidential treatment. The information has been submitted to EPA under sections 3, 4, 6, and 7 of FIFRA and under sections 408 and 409 of FFDCA.

In accordance with the requirements of 40 CFR 2.307(h)(2), the contract with SAIC prohibits use of the information for any purpose not specified in the contract; prohibits disclosure of the information to a third party without prior written approval from the Agency; and requires that each official and employee of the contractor sign an agreement to protect the information from unauthorized release and to handle it in accordance with the FIFRA Information Security Manual. In addition, SAIC is required to submit for EPA approval a security plan under which any CBI will be secured and protected against unauthorized release or compromise. No information will be provided to this contractor until the above requirements have been fully satisfied. Records of information provided to this contractor will be maintained by the Project Officer for this contract in the EPA Office of Pesticide Programs. All information supplied to SAIC by EPA for use in connection with this contract will be returned to EPA when SAIC has completed its work.

Dated: September 4, 1997.

Daniel M. Barolo,

Director, Office of Pesticide Programs.

[FR Doc. 97–25098 Filed 9–23–97; 8:45 am]

BILLING CODE 6560–50–F

ENVIRONMENTAL PROTECTION AGENCY

[FRL–5897–6]

Public Meetings of the Urban Wet Weather Flows Advisory Committee, the Storm Water Phase II Advisory Subcommittee, and the Sanitary Sewer Overflow Advisory Subcommittee

AGENCY: Environmental Protection Agency.

ACTION: Notice.

SUMMARY: Notice is given that the Environmental Protection Agency (EPA) is convening a public meeting of the Storm Water Phase II Advisory Subcommittee. This meeting is open to the public but requires advance registration since seating is very limited. The Storm Water Phase II Advisory Committee will discuss the latest draft of the proposed rule, the economic analysis for the proposed rule, and the tool box to be established for program implementation.

DATES: October 6–7, 1997. On the first day of the meeting, the Storm Water Phase II meeting will start at 10 a.m. EST and end at 5 p.m. On the second day, the meeting will begin at 8 a.m. and end at approximately 5 p.m.

ADDRESSES: The meeting will be held in the offices of Resolve, 1255 23rd Street, NW., Suite 275, Washington, DC 20037. The telephone number is (202) 944–2300.

FOR FURTHER INFORMATION CONTACT: Sharie Centilla, Office of Wastewater Management, at (202) 260–6052, or Internet: centilla.sharie@epamail.epa.gov.

Dated: September 17, 1997.

Michael B. Cook,

Director, Office of Wastewater Management, Designated Federal Official.

[FR Doc. 97–25340 Filed 9–23–97; 8:45 am]

BILLING CODE 6560–50–P

ENVIRONMENTAL PROTECTION AGENCY

[OPP–42064C; FRL–5741–9]

Department of Energy Plan for Certification of Pesticide Applicators

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of Approval of Certification Plan.

SUMMARY: On June 23, 1997, EPA announced its intention to approve a revised Department of Energy (DOE) plan for the certification of pesticide applicators. The revised DOE plan was similar to the original plan in only covering applicators in the Bonneville Power Administration. The revised plan retained the original certification category of right-of-way pest control and added a new category of wood treatment. The revised plan replaced the original 3–year recertification interval with a 1 year recertification interval. No comments were received on EPA's proposal to approve the revised DOE certification plan. Notice is hereby given of EPA's granting final approval of the revised DOE plan.

ADDRESSES: Copies of the DOE revised plan are available for viewing at the following locations during normal business hours:

1. U.S. Environmental Protection Agency, Office of Pesticide Programs, Crystal Mall #2, 1921 Jefferson Davis Highway, Rm. 1121, Arlington, VA 22202. Contact: John R. MacDonald, (703) 305–7370.

2. U.S. Department of Energy, Bonneville Power Administration, 905 Northeast Eleventh, Stop EP-5, Fifth Floor, Portland, OR 97232. Contact: James Meyer, (503) 230–5038.

3. Select U.S. Department of Energy installations. Contact: James Meyer at aforementioned location for list of locations.

FOR FURTHER INFORMATION CONTACT: By mail: John R. MacDonald (7506C), Office of Pesticide Programs, Environmental Protection Agency, 401 M St., SW., Washington, DC 20460. Office location and telephone number: Crystal Mall #2, 1921 Jefferson Davis Highway, Rm. 1121, Arlington, VA, Telephone: (703) 305–7370.

SUPPLEMENTARY INFORMATION: In the **Federal Register** of October 7, 1988, notice was published announcing the final approval of a DOE pesticide applicator certification plan. On June 23, 1997 (62 FR 33862) (FRL–5717–3), EPA announced its intention to approve a revised DOE certification plan. The revised DOE certification plan added a new wood treatment category and retained the existing right-of-way category. The revised certification plan also established an annual recertification period to replace the current 3–year period. The revised certification plan will continue to base certification and recertification on the taking and passing of a written

examination. The revised DOE certification plan will continue to cover only employees of the Bonneville Power Administration. The DOE estimates that there will be 100 applicators certified in the new wood treatment category. There are presently approximately 150 applicators certified in the right-of-way category, whose certification will be unaffected by this action.

No comments were received on EPA's notice of intention to approve the revised DOE certification plan. Therefore, EPA approves the revised DOE certification plan.

List of Subjects

Environmental protection.

Dated: September 9, 1997.

Lynn R. Goldman,

Assistant Administrator for Prevention, Pesticides and Toxic Substances.

[FR Doc. 97–25337 Filed 9–23–97; 8:45 am]

BILLING CODE 6560–50–F

ENVIRONMENTAL PROTECTION AGENCY

[PF–764; FRL–5745–8]

E.I. DuPont de Nemours and Co., Inc.; Pesticide Tolerance Petition Filing

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice.

SUMMARY: This notice announces the initial filing of a pesticide petition proposing the establishment of regulations for residues of a certain pesticide chemical in or on various food commodities.

DATES: Comments, identified by the docket control number PF–764, must be received on or before October 24, 1997.

ADDRESSES: By mail submit written comments to: Information and Records Integrity Branch, Public Information and Services Division (7506C), Office of Pesticides Programs, Environmental Protection Agency, 401 M St., SW., Washington, DC 20460. In person bring comments to: Rm. 1132, CM #2, 1921 Jefferson Davis Highway, Arlington, VA.

Comments and data may also be submitted electronically by following the instructions under ''SUPPLEMENTARY INFORMATION.'' No confidential business information should be submitted through e-mail.

Information submitted as a comment concerning this document may be claimed confidential by marking any part or all of that information as ''Confidential Business Information'' (CBI). CBI should not be submitted through e-mail. Information marked as CBI will not be disclosed except in accordance with procedures set forth in 40 CFR part 2. A copy of the comment that does not contain CBI must be submitted for inclusion in the public record. Information not marked confidential may be disclosed publicly by EPA without prior notice. All written comments will be available for public inspection in Rm. 1132 at the address given above, from 8:30 a.m. to 4 p.m., Monday through Friday, excluding legal holidays.

FOR FURTHER INFORMATION CONTACT: James Stone, PM-25 Team, Registration Division (7505C), Office of Pesticide Programs, Environmental Protection Agency, 401 M St., SW., Washington, DC 20460. Office location, telephone number, and e-mail address: Rm. 257, Crystal Mall #2 1921 Jefferson Davis Highway, Arlington, VA 22202, (703) 305–7391; e-mail: stone.james@epamail.epa.gov.

SUPPLEMENTARY INFORMATION: EPA has received a pesticide petition as follows proposing the establishment and/or amendment of regulations for residues of certain pesticide chemical in or on various food commodities under section 408 of the Federal Food, Drug, and Comestic Act (FFDCA), 21 U.S.C. 346a. EPA has determined that this petition contains data or information regarding the elements set forth in section 408(d)(2); however, EPA has not fully evaluated the sufficiency of the submitted data at this time or whether the data supports granting of the petition. Additional data may be needed before EPA rules on the petition.

The official record for this notice of filing, as well as the public version, has been established for this notice of filing under docket control number [PF–764] (including comments and data submitted electronically as described below). A public version of this record, including printed, paper versions of electronic comments, which does not include any information claimed as CBI, is available for inspection from 8:30 a.m. to 4 p.m., Monday through Friday, excluding legal holidays. The official record is located at the address in ''ADDRESSES'' at the beginning of this document.

Electronic comments can be sent directly to EPA at:

opp-docket@epamail.epa.gov

Electronic comments must be submitted as an ASCII file avoiding the use of special characters and any form of encryption. Comment and data will also be accepted on disks in Wordperfect 5.1 file format or ASCII file format. All comments and data in electronic form must be identified by the docket control number (PF–764) and appropriate petition number. Electronic comments on this notice may be filed online at many Federal Depository Libraries.

List of Subjects

Environmental protection, Agricultural commodities, Food additives, Feed additives, Pesticides and pests, Reporting and recordkeeping requirements.

Dated: September 11, 1997.

Peter Caulkins,

Acting Director, Registration Division, Office of Pesticide Programs.

Summaries of Petitions

Petitioner summaries of the pesticide petitions are printed below as required by section 408(d)(3) of the FFDCA. The summaries of the petitions were prepared by the petitioners and represent the views of the petitioners. EPA is publishing the petition summaries verbatim without editing them in any way. The petition summary announces the availability of a description of the analytical methods available to EPA for the detection and measurement of the pesticide chemical residues or an explanation of why no such method is needed.

E.I. DuPont de Nemours and Co., Inc

PP 4F4391

EPA has received a pesticide petition (PP 4F4391) from E.I. DuPont de Nemours and Co., Inc (DuPont), Barley Mill Plaza, P.O. Box 80083, Wilmington, DE 19880–0038 proposing pursuant to section 408(d) of the Federal Food, Drug and Cosmetic Act, 21 U.S.C. 346a(d), to amend 40 CFR part 180 by establishing a tolerance for residues of pyrithiobac sodium salt (sodium 2-chloro-6-[(4,6-dimethoxypyrimidin-2-yl)thio]benzoate) in or on the raw agricultural commodities cottonseed at 0.02 part per million (ppm) and cotton gin byproducts at 0.10 (ppm). The proposed analytical method involves homogenization, filtration, partition and cleanup with analysis by using ultraviolet detection. EPA has determined that the petition contains data or information regarding the elements set forth in section 408(d)(2) of the FFDCA; however, EPA has not fully evaluated the sufficiency of the submitted data at this time or whether the data supports granting of the petition. Additional data may be needed before EPA rules on the petition.

A. Residue Chemistry

1. *Plant metabolism*. The qualitative nature of the residues of pyrithiobac sodium in cotton is adequately understood. Metabolism studies with pyrithiobac sodium indicate the major metabolic pathway being o-dealkylation of the parent compound resulting in o-desmethyl pyrithiobac sodium (O-DPS). O-DPS, both free and conjugated, was the major metabolite identified in cotton foliage. The results of a confined crop rotation study with pyrithiobac sodium revealed the presence of a metabolite 2-chloro-6-sulfobenzoic acid (CSBA) not seen in the cotton metabolism study. This metabolite appeared to originate from soil metabolism of pyrithiobac sodium. Since preemergence applications of pyrithiobac sodium are allowed, crop residues of CSBA were considered a possibility. In consideration of PP 4F4391 CBTS, in consultation with the HED Metabolism Committee has previously concluded that for the proposed use on cotton, none of the pyrithiobac sodium metabolites including O-DPS and CSBA warrant inclusion in the tolerance regulation, and that the only residue of concern is the parent, pyrithiobac sodium.

2. *Analytical method*. There are independently validated practical analytical methods available using liquid chromatography (HPLC) with column switching and ultraviolet (UV) detection, to measure levels of pyrithiobac sodium in or on cottonseed and cotton gin byproducts, with limits of quantitation that will allow for monitoring of crop residues at or above tolerance levels. EPA has previously provided information on the method for cottonseed to FDA for future publication in PAM II.

3. *Magnitude of residues*. Crop field trial residue data from 60 day PHI studies show that the proposed pyrithiobac sodium tolerances on these raw agricultural commodities will not be exceeded when pyrithiobac sodium is used as directed. An adequate cottonseed processing study shows that pyrithiobac sodium does not concentrate in cottonseed processed commodities. No tolerances on processed commodities are required.

B. Toxicological Profile

1. *Acute toxicity*. Pyrithiobac sodium technical has been placed in EPA Toxicity Category II for acute eye irritation based on the test article inducing irritation in the form of corneal opacity, iritis and conjunctival redness, and discharge in the eyes of rabbits after receiving ocular doses of 36 mg (0.1 ml). Signs of irritation were clear within 14 days of treatment. Pyrithiobac sodium has been placed in Toxicity Category III for acute dermal toxicity based on the test article being nonlethal and nonirritating at the limit dose of 2,000 mg/kg, the highest dose tested (HDT). Pyrithiobac sodium has been placed in Toxicity Category III for acute oral toxicity based on acute oral LD_{50}s of 3,200 mg/kg for both male and female rats. Pyrithiobac sodium has been placed in Category IV for the remaining acute toxicity tests based on the following: a rat acute inhalation study with an LC_{50} of > 6.9 mg/l; and a primary dermal irritation test that did not induce a dermal irritation response. A dermal sensitization test with pyrithiobac sodium technical in guinea pigs demonstrated no significant effects. Based on these results, pyrithiobac sodium does not pose an acute dietary or exposure risk.

2. *Genotoxicty*. Pyrithiobac sodium technical was negative (non-mutagenic and non-genotoxic) in the following tests: Ames microbial mutation assay; the hypoxanthine-guanine phosphoribosyl transferase gene mutation assay using Chinese hamster ovary cells; and induction of unscheduled DNA synthesis (UDS) in primary rat hepatocytes. Pyrithiobac sodium was positive in an *in vitro* assay for chromosome aberrations in human lymphocytes. It was negative for the induction of micronuclei in the bone marrow cells of male and female CD-1 mice administered the test article by oral gavage at 500, 1,000 or 2,000 mg/kg. Based on the weight of these data, pyrithiobac sodium is neither genotoxic nor mutagenic.

3. *Reproductive and developmental toxicity*. A two generation, 4 litter reproduction study with CD rats treated at dietary levels of 0, 25, 1,500, 7,500 or 20,000 ppm of pyrithiobac sodium demonstrated a maternal NOEL of 1,500 ppm (103 mg/kg/day) and a maternal LOEL of 7,500 ppm (508 mg/kg/day), based on decreased body weight gain and food efficacy. An offspring NOEL of 7,500 ppm (508 mg/kg/day) and LOEL of 20,000 ppm (1,551 mg/kg/day) were also demonstrated based on decreased offspring body weight. Pyrithiobac sodium was not teratogenic when administered to rats or rabbits.

A developmental toxicity study with pyrithiobac sodium in rats demonstrated a maternal NOEL of 200 mg/kg and LOEL of 600 mg/kg due to increased incidence of salivation. A developmental NOEL of 600 mg/kg and LOEL of 1,800 mg/kg were demonstrated based on an increased incidence of skeletal variations.

A developmental toxicity study with pyrithiobac sodium in rabbits demonstrated maternal and developmental NOELs of 300 mg/kg and a maternal LOEL of 1,000 mg/kg based on mortality, decreased body weight gain and feed consumption, increased incidence of clinical signs, and an increase in early resorptions. A developmental LOEL of 1,000 mg/kg was based on decreased fetal body weight gain. Based on the weight of these data, pyrithiobac sodium is not considered a reproductive or developmental hazard.

4. *Subchronic toxicity*. In a 90–day feeding study in rats conducted with pyrithiobac sodium at dietary levels of 0, 10, 50, 500, 7,000 and 20,000 ppm, the NOEL was 500 ppm (31.8 and 40.5 mg/kg/day, m/f and the LOEL was 7,000 ppm (466 and 588 mg/kg/day, m/f) based on decreased body weight gains and increased rate of hepatic B-oxidation in males.

In a 90–day feeding study in mice conducted with pyrithiobac sodium at dietary levels of 0, 10, 50, 500, 1,500 and 7,000 ppm, the NOEL was 500 ppm (83.1 and 112 mg/kg/day, m/f) and the L0EL was 1,500 ppm (263 and 384 mg/kg/day, m/f) based on increased liver weight and increased incidence of hepatocellular hypertrophy in males and decreased neutrophil count in females.

In a 90–day feeding study in dogs conducted with pyrithiobac sodium at dietary levels of 0, 50, 5,000, or 20,000 ppm, the NOEL was 5,000 ppm (165 mg/kg/day) and the LOEL was 20,000 ppm (626 mg/kg/day) based on decreased red blood cell count, hemoglobin, and hematocrit in females and increased liver weight in both sexes.

In a 21–day dermal study with rats conducted with pyrithiobac sodium at exposure levels of 0, 50, 500, or 1,200 mg/kg/day, the dermal irritation NOEL was 500 mg/kg/day and the dermal irritation LOEL was 1,200 mg/kg/day. There were no systemic effects observed at this high dose; therefore, the systemic NOEL is considered to be 1,200 mg/kg/day.

5. *Chronic toxicity*. A 1–year feeding study in dogs conducted with pyrithiobac sodium at dietary levels of 0, 100, 5,000, and 20,000 ppm resulted in a NOEL of 5,000 ppm (143 and 166 mg/kg/day, m/f) and a LOEL of 20,000 ppm (580 and 647 mg/kg/day, m/f) based on decreases in body weight gain and increased liver weight.

A 78–week oncogenicity study in mice was conducted with pyrithiobac sodium at dietary levels of 0, 10, 150, 1,500 and 5,000 ppm. The systemic

NOEL is 1,500 ppm (217 and 319 mg/kg/day, m/f) and the LEL is 5,000 ppm (745 and 1,101 mg/kg/day, m/f), based on decreased body weight gain and liver lesions. Kidney effects were also observed at 5,000 ppm; however, these were present at low incidence and were of minimal severity and were considered to be of only minimal biological significance. Increased incidence of foci/focus of hepatocellular alteration was observed in males fed 5,000 ppm diets. Increased incidences of hepatocellular neoplasms (adenomas or adenomas plus carcinomas) were observed only in 150 and 1,500 ppm males. The incidence of these liver tumors was not significantly increased in the 5,000 ppm males or in females at any dose level; the 5,000 ppm male tumor incidence was within the historical control range.

A 2–year study in rats was conducted at dietary pyrithiobac sodium levels of 0, 5, 25, 1,500 or 5,000 ppm for males and 0, 5, 25, 5,000 or 15,000 ppm for females. The NOEL for systemic effects was 1,500 ppm (58.7 mg/kg/day) for males and 5,000 ppm (278 mg/kg/day) for females. The LEL was 5,000 ppm (200 mg/kg/day for males)/15,000 ppm (918 mg/kg/day) for females. The LEL was based on the following: decreased body weight, body weight gain and food efficiency (for females); mild changes in hematology and urinalysis, clinical signs indicative of urinary tract dysfunction (both sexes); increased incidence of focal cystic degereration in the liver and increased rate of hepatic peroxisome beta-oxidation (males); and an increased incidence of inflammatory and degenerative microscopic lesions in the kidney (females). There was evidence of oncogenicity based on an increased trend for kidney tubular combined adenoma/carcinoma in male rats and an increased trend for kidney tubular adenomas in female rats. Although the incidences were low, they were statistically significant. The highest dose level tested in male rats (5,000 ppm) was considered adequate for assessment of oncogenic potential, that in female rats (15,000 ppm) exceeded the Maximum Tolerated Dose (MTD).

Carcinogenicity. In consideration of PP 4F4391 the HED Carcinogenicity Peer Review Committee has previously concluded that the available data provide limited evidence of the carcinogenicity of pyrithiobac sodium in mice and rats and has classified pyrithiobac sodium as a Group C (possible human carcinogen with limited evidence of carcinogenicity in animals) in accordance with Agency guidelines published in the **Federal Register** in 1986 (51 FR 33992, Sept. 24, 1986) and recommend that for the purpose of risk characterization a low-dose extrapolation model should be applied to the experimental animal tumor data for quantification for human risk (Q_1*). This decision was based on liver adenomas, carcinomas and combined adenoma/carcinomas in the male mouse and kidney tubular adenomas, carcinomas and combined adenoma/carcinomas in the male rat. The unit risk, Q_1* $(mg/kg/day)^{-1}$, of pyrithiobac sodium is 1.05×10^{-3} (mg/kg/day)-1 in human equivalents based on male kidney tumors.

6. *Animal metabolism*. Disposition and metabolism of pyrithiobac sodium were tested in male and female rats using two radiolabeled forms of pyrithiobac sodium. Either phenyl-labeled or pryimidine-labeled compounds were administered orally at 5 or 250 mg/kg. In addition, i.v. administration was evaluated at 5 mg/kg. Essentially all of the dose was excreted in the urine and feces, with greater than 90% being excreted within 48 hours. No label was detected in the expired air. Only minute quantities of radioactivity (at or near the limit of detection) were detected in the major organs of metabolism and excretion. This study indicates that pyrithiobac sodium has low toxicity and does not accumulate within the body. The major compound eliminated in urine and feces was O-DPS (desmethyl metabolite), formed by demethylation of the pyrimidine ring. There was evidence that conjugation with glucuronic acid and 5-hydroxylation of the pyrimidine ring of pyrithiobac sodium were additional minor routes of metabolism in the rat. The ruminant metabolism of pyrithiobac sodium was studied in lactating goats fed at a level of 15 mg/kg for 5 consecutive days, equaling a dose greater than 1000 times the anticipated residues of pyrithiobac sodium and its metabolites in cottonseed, and greater than 100 times the anticipated residues in cotton gin byproducts. Of the total administered dose 76–80% was recovered in the excreta plus cagewashes. Concentrations of radioactivity in milk, muscle, fat, whole-blood, and plasma were negligible. Biotransformation of the parent compound was not substantial with 90% of urine radioactivity and 40% of fecal extract corresponding to parent test substance. The major biotransformation pathway was *O*-demethylation. The results of this study indicate low potential for transfer of residues of pyrithiobac sodium and/or its metabolites into edible tissues or milk of ruminants, even at highly exaggerated feeding levels.

7. *Metabolite toxicology*. There is no evidence that the metabolites of pyrithiobac sodium as identified in either the plant metabolism, confined crop rotation, or animal metabolism studies are of any toxicological significance.

i. *Neurotoxicity*. A 90–day rat neurotoxicity screen battery conducted with pyrithiobac sodium resulted in a systemic no observed-effect level (NOEL) of 7,000 ppm (466 and 588 mg/kg/day, m/f) and a systemic lowest-observed-effect level (LOEL) of 20,000 ppm (1,376 and 1,609 mg/kg/day, m/f) based on reduced body weight gain and food efficiency and increased liver weight. Slight reductions in hind-leg grip strength and slightly increased foot splay in males were observed in 20,000 ppm males. However, because these were of small magnitude, lacked statistical significance and corresponding histopathology, pyrithiobac sodium was not considered a neurotoxin. The NOEL for neurotoxicity was 20,000 ppm (HDT).

ii. *Endocrine effects*. No special studies investigating potential estrogenic or other endocrine effects of pyrithiobac sodium have been conducted. However, the standard battery of required toxicology studies has been completed and found acceptable. These include an evaluation of the potential effects on reproduction and development, and an evaluation of the pathology of the endocrine organs following repeated or long-term exposure to doses that far exceed likely human exposures. Based on these studies there is no evidence to suggest that pyrithiobac sodium has an adverse effect on the endocrine system.

C. Aggregate Exposure

1. *Dietary exposure*. It is proposed that pyrithiobac sodium be defined as the residue for enforcement purposes. Monitoring for pyrithiobac sodium residues in field samples will provide an adequate estimate of this compound in edible portions of treated crops.

2. *Food*—i. *acute dietary exposure*. A Tier I acute dietary exposure analysis was conducted using the Dietary Exposure Evaluation Model (DEEM ver. 5.10) and assuming tolerance level residues for cottonseed oil, cottonseed meal, and a very conservative residue value of 6 parts per billion (ppb) for all sources of dietary water. Using the acute endpoint of 200 mg/kg from a developmental toxicity study in rats, the margins of exposure were greater than 100,000 for all 22 population subgroups at the 95th percentile exposure.

ii. *Chronic dietary exposure.* For purposes of assessing the potential chronic dietary exposure under this tolerance, an estimate of aggregate exposure is made using the proposed tolerance on cottonseed at 0.02 ppm, cotton gin byproducts at 0.10 ppm, and a very conservative contribution from drinking water based on GENEEC modeling. The potential exposure is obtained by multiplying the tolerance level residues by the consumption data which estimates the amount of cottonseed products translated as cottonseed meal and cottonseed oil eaten by various population subgroups. Cottonseed and cotton gin byproducts are fed to animals, thus exposure of humans to residues of pyrithiobac sodium might result if such residues are transferred to meat, milk, poultry, or eggs. However, in previous consideration of PP 4F4391 CBTS has concluded that secondary residues in meat, milk, poultry and eggs are not expected from the use of cottonseed as an animal feed. A ruminant (goat) metabolism study further demonstrates that residues of pyrithiobac sodium in cotton gin byproducts will not result in secondary meat or milk residues when this commodity is fed to livestock. There are no other established tolerances or registered uses for pyrithiobac sodium in the United States. Based on a NOEL of 58.7 mg/kg/day, from the chronic rat toxicity study and a 100-fold safety factor, the reference dose (RfD) is 0.58 mg/kg/day. Assuming residues at tolerance levels and that 100% of the crop is being treated, a theoretical maximum residue contribution (TMRC) of < 0.1 mg/kg/day is calculated using the DEEM computer software (version 5.1, Novigen Sciences, Inc., 1997). With the above assumptions which clearly overestimate potential human exposure and are a most conservative assessment of risk, dietary (food) exposure to pyrithiobac sodium will utilize significantly less than 1% of the RfD for the overall U.S. population. For the most highly exposed subgroup, non-nursing infants less than 1 year old, the TMRC is also < 0.1 mg/kg/day, which is still less than 1% of the RfD. The unit risk, Q_1* $(mg/kg/day)^{-1}$, of pyrithiobac sodium is 1.05×10^{-3} $(mg/kg/day)^{-1}$ in human equivalents based on male kidney tumors. Based on this upper bound potency factor (Q*), a 70–year lifespan, and the assumption that 100% of the crop is treated with pyrithiobac sodium, the upper-bound limit of a dietary carcinogenic risk is calculated in the range of 1 incidence in a billion (1.0×10^{-9}).

3. *Drinking water* . Other potential dietary sources of exposure of the general population to pesticides are residues in drinking water. There is no Maximum Contaminant Level established for residues of pyrithiobac sodium. The petitioner has reported to the Environmental Fate and Groundwater Branch of EPA (EFGWB) the results of a prospective groundwater monitoring study conducted at a highly vulnerable site. This study confirms the previous interim conclusions of EFGWB that pyrithiobac sodium may not be stable enough to leach to groundwater at most use sites, even in sandy soils. The potential for pyrithiobac sodium to enter surface water is also very low. This is supported by modeling done using GENEEC which under worst case conditions (100% of area treated, long half-life, etc.) predicted peak surface water concentrations of only 6 ppb. All environmental fate data requirements for pyrithiobac sodium have now been satisfied and based on these studies, the conditions of use, and worst-case modeling, the potential for finding pyrithiobac sodium residues in drinking water is minimal.

4. *Non-dietary exposure.* Pyrithiobac sodium is not registered for any use which could result in non-occupational, non-dietary exposure to the general population.

D. Cumulative Effects

Pyrithiobac sodium is based on a new chemical class; there are no known registered herbicides with similar structure. Therefore, EPA should consider only the potential risks of pyrithiobac sodium in its exposure assessment. The herbicidal activity of pyrithiobac sodium is due to the inhibition of acetolactate synthase (ALS), an enzyme only found in plants. ALS is part of the biosynthetic pathway leading to the formation of branched chain amino acids. Animals lack ALS and this biosynthetic pathway. This lack of ALS contributes to the low toxicity of pyrithiobac sodium in animals. There is no evidence to indicate or suggest that pyrithiobac sodium has any toxic effects on mammals that would be cumulative with those of any other chemical.

E. Safety Determination

1. *U.S. population.* Based on a complete and reliable toxicity database, the EPA has adopted an RfD value of 0.58 mg/kg/day using the NOEL of 58.7 mg/kg/day, from the 2–year chronic toxicity study in rats and a 100-fold safety factor. Using crop tolerance levels and assuming 100% of the crop treated, a Theoretical Maximum Residue Contribution (TMRC) was calculated for the overall U.S. population and 22 population subgroups. This analysis concluded that aggregate exposure to pyrithiobac sodium will utilize significantly less than 1% of the RfD for either the entire U.S. population or any subgroup population. The TMRC for the most highly exposed subgroup identified as non-nursing infants less than 1 year old was also < 0.1 mg/kg/day. EPA generally has no concern for exposure below 100% of the RfD because the RfD represents the level at or below which daily aggregate dietary exposure over a lifetime will not pose appreciable risk to human health. Thus, there is a reasonable certainty that no harm will result from aggregate exposure to pyrithiobac sodium residues. The unit risk, Q_1* $(mg/kg/day)^{-1}$, of pyrithiobac sodium is 1.05×10^{-3} $(mg/kg/day)^{-1}$ in human equivalents based on male kidney tumors. Based on this upper bound potency factor (Q_1*) and assuming a 70 year lifetime exposure an upper-bound limit of a dietary carcinogenic risk is calculated in the range of 1 incidence in a billion (1.0×10^{-9}). This indicates a negligible cancer risk.

2. *Infants and children.* In assessing the potential for additional sensitivity of infants and children to residues of pyrithiobac sodium, data from the previously discussed developmental and reproduction toxicity studies were considered. Developmental studies are designed to evaluate adverse effects on the developing organism resulting from pesticide exposure during pre-natal development. Reproduction studies provide information relating to reproductive and other effects on adults and offspring from pre-natal and post-natal exposure to the pesticide. Based on the weight of these data, pyrithiobac sodium was not a reproductive toxicant. Maternal and developmental effects (NOEL's, LOEL's) were comparable indicating no increase in susceptibility of developing organisms. No evidence of endocrine effects were noted in any study. FFDCA section 408 provides that EPA may apply an additional safety factor for infants and children in the case of threshold effects to account for pre and post-natal toxicity and the completeness of the database. Based on current toxicological data requirements, the database for pyrithiobac sodium relative to pre- and post-natal effects for children is complete. The NOEL of 58.7 mg/kg/day from the 2–year rat study with pyrithiobac sodium, which was used to calculate the RfD, is lower than any of the NOEL's defined in the developmental and reproductive toxicity studies with pyrithiobac

sodium. When the weight of these facts is considered an additional safety factor is not warranted for developmental effects. As stated above, aggregate exposure assessments utilized significantly less than 1% of the RfD for either the entire U.S. population or any of 22 population subgroups including infants and children. Therefore, it may be concluded that there is reasonable certainty that no harm will result to infants and children from aggregate exposure to pyrithiobac sodium residues.

F. International Tolerances

There are no established Codex MRLs for pyrithiobac sodium on cottonseed. An established Mexican tolerance for pyrithiobac sodium on cottonseed is identical to the U.S. tolerance. Compatibility is not a problem at this time.

[FR Doc. 97–25234 Filed 9-23-97; 8:45 am]
BILLING CODE 6560–50–F

ENVIRONMENTAL PROTECTION AGENCY

[PF–761; FRL–5740–9]

Yoshitomi Fine Chemicals Ltd.; Pesticide Tolerance Petition Filing

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice.

SUMMARY: This notice announces the initial filing of a pesticide petition proposing the establishment of tolerances for residues of 4,5-Dichloro-1,2-Dithiol-3-one (CASRN 1192–52–5) in or on paper and paperboard.

DATES: Comments, identified by the docket control number PF–761, must be received on or before October 24, 1997.

ADDRESSES: By mail submit written comments to: Information and Records Integrity Branch, Public Information and Services Divison (7506C), Office of Pesticides Programs, Environmental Protection Agency, 401 M St., SW., Washington, DC 20460. In person bring comments to: Rm. 1132, CM #2, 1921 Jefferson Davis Highway, Arlington, VA.

Comments and data may also be submitted electronically by following the instructions under ''SUPPLEMENTARY INFORMATION.'' No confidential business information should be submitted through e-mail.

Information submitted as a comment concerning this document may be claimed confidential by marking any part or all of that information as ''Confidential Business Information'' (CBI). CBI should not be submitted through e-mail. Information marked as CBI will not be disclosed except in accordance with procedures set forth in 40 CFR part 2. A copy of the comment that does not contain CBI must be submitted for inclusion in the public record. Information not marked confidential may be disclosed publicly by EPA without prior notice. All written comments will be available for public inspection in Rm. 1132 at the address given above, from 8:30 a.m. to 4 p.m., Monday through Friday, excluding legal holidays.

FOR FURTHER INFORMATION CONTACT: By mail: Portia Jenkins, Acting Product Manager (34), Antimicrobials Division (7510C), Office of Pesticide Programs, Environmental Protection Agency, 401 M St., SW., Washington, DC 20460. Office location and telephone number: Rm. 6C, Crystal Plaza #1, 2800 Crystal Drive, Arlington, VA, (703) 308–6230; e-mail: jenkins.portia@epamail.epa.gov.

SUPPLEMENTARY INFORMATION: EPA has received a pesticide petition ((PP) 7F4902) from Yoshitomi Fine Chemicals, Ltd., 6–9, Hiranomachi 2-chome, Chuo-ku, Osaka, 541, Japan, proposing pursuant to section 408(d) of the Federal Food, Drug and Cosmetic Act (FFDCA), 21 U.S.C. 346a(d), to amend 40 CFR 185 ''Tolerances for Pesticides in Food'' by establishing Subpart D ''Tolerance Exemptions for Pesticides in Foods'' and promulgating therein section 185.9000 establishing a tolerance exemption for residues of the slimicide 4,5-Dichloro-1,2-Dithiol-3-one (CASRN 1192–52–5) in or on paper and paperboard resulting from its addition to pulp and paper mill process water to control slime forming organisms. EPA has determined that the petition contains data or information regarding the elements set forth in section 408(d)(2); however, EPA has not fully evaluated the sufficiency of the submitted data at this time or whether the data supports granting of the petition. Additional data may be needed before EPA rules on the petition.

The official record for this notice of filing, as well as the public version, has been established for this notice of filing under docket control number [PF–761] (including comments and data submitted electronically as described below). A public version of this record, including printed, paper versions of electronic comments, which does not include any information claimed as CBI, is available for inspection from 8:30 a.m. to 4 p.m., Monday through Friday, excluding legal holidays. The official record is located at the address in ''ADDRESSES''.

Electronic comments can be sent directly to EPA at:
opp-docket@epamail.epa.gov

Electronic comments must be submitted as an ASCII file avoiding the use of special characters and any form of encryption. Comment and data will also be accepted on disks in Wordperfect 5.1 file format or ASCII file format. All comments and data in electronic form must be identified by the docket number (PF–761) and appropriate petition number. Electronic comments on this notice may be filed online at many Federal Depository Libraries.

List of Subjects

Environmental protection, Administrative practice and procedure, Paper and paperboard, Slimicides, Pesticides and pests, Reporting and recordkeeping requirements.

Dated: September 16, 1997.

Frank Sanders,

Director, Antimicrobials Division, Office of Pesticide Programs.

Summary of Petition

Petitioner summary of the pesticide petition is printed below as required by section 408(d)(3) of the FFDCA. The summary of the petition was prepared by the petitioner and represent the views of the petitioner. The petition summary announces the availability of a description of the analytical methods available to EPA for the detection and measurement of the pesticide chemical residues or an explanation of why no such method is needed.

Yoshitomi Fine Chemicals, Ltd.

A. Residue Chemistry

This petition is not for residues in or on raw agricultural commodities. It is for residues in or on food contact paper or paperboard. Accordingly, the residue chemistry data submitted are solely for the residues remaining in food contact paper and paperboard when the subject slimicide (4,5-Dichloro-1,2-Dithiol-3-one, CASRN 1192–52–5, hereafter referred to as RYH–86) is used in pulp and paper mill process water to control slime forming organisms.

1. *Residues in paper and paperboard.* GC-MS-SIM analysis of approximately 30 paper and paperboard samples manufactured in a papermill which used RYH–86 amended slurry water revealed no RYH–86 detectable with a detection limit of 100 µg/kilograms (Kg) of paper (i.e., 100 parts per billion (ppb)). Extraction of such samples with

food simulating solvents (FSL's), using standard FDA methods for determining food additive extractives from food-contact materials which allowed for the equilibration of RYH–86 between the paper and paperboard samples and the FSL's for 10–days, revealed no RYH–86 migration into FSL's at detection limits of 10 µg/Kg for aqueous FSL's and 100 µg/Kg for fatty FSL's (using the same GC-MS-SIM method for analysis).

2. *Analytical method.* This is a tolerance exemption petition and, accordingly, no enforcement analytical method is proposed.

B. Toxicological Profile

1. *Acute toxicity.* Technical RYH–86 (99.8% active ingredient) is moderately toxic by the oral route, with acute oral LD_{50} of 350 milligrams/kilograms (mg/kg) in the male rat and 372 mg/kg in the female rat (MRID 41562401). Technical RYH–86 is practically nontoxic by dermal application (acute dermal LD_{50} > 5,000 mg/kg) but was quite irritant to the skin (severe skin irritation and dermal necrosis but no mortalities were observed) in an acute dermal toxicity and irritation study (MRIDs 41531114 & 41562402). The acute inhalation toxicity of RYH–86 was waived by EPA during review of the registration for RYH–86 Slimicide (EPA Reg. No. 63898–1) due to its being applied only by injection into process water and the resulting lack of significant inhalation exposure potential. Guideline 81–4 and 81–5 primary eye and skin irritation studies for RYH–86 manufacturing use product (about 50% RYH–86) showed it to produce severe ocular damage and severe skin irritation (MRIDs 41531115 & 41531116). In these same studies, technical RYH–86 was a severe eye irritant and a moderate skin irritant. Tested at 1% solution (to minimize irritancy effects) RYH–86 was not a dermal sensitizer (MRID 41531117).

2. *Subchronic toxicity.* The evaluation of the subchronic toxicity of RYH–86 has been carried out in 2 separate studies which, together with a bridging analysis of both, constitute one 3-volume data set which was previously reviewed by EPA during the registration review for RYH–86 Slimicide (EPA Reg. No. 63898–1: MRIDs 41531118, 41531119, & 41531120). In these studies, one study used relatively high doses of RYH–86 and the other used lower doses. The principal effect of note in these studies was gastrointestinal irritation exhibiting as a thickening of the gastric mucosa and, at sufficiently high dose, ulceration. The No Observed Effects Level (NOEL) for these effects was 3.8 mg/Kg/day and the Lowest Observed Effects Level (LOEL) was 5.0 mg/Kg/day. Other effects seen included: an increase in relative renal weight in males only (LOEL 5.0 mg/Kg/day, NOEL 3.8 mg/Kg/day); an increase in relative testicular weight and liver weight (LOEL 12 mg/Kg/day, NOEL 5.0 mg/Kg/day); possible GI complications related mortality (LOEL 45 mg/Kg/day, NOEL 15 mg/Kg/day); and miscellaneous effects on clinical chemistry, ketonuria, body weight depression, and clinical signs of distress (LOEL 45 mg/Kg/day, NOEL 15 mg/Kg/day).

3. *Chronic toxicity.* Chronic toxicity studies (2–year rat and 1–year dog) have not been conducted with RYH–86 due to the fact that its intended use pattern: (a) does not involve a potential for chronic occupational exposure; (b) leads to only negligible dietary exposure [see below]; and, (c) the only notable adverse effect observed in subchronic gavage studies with the rat was GI irritation / ulceration [see above]. Accordingly, Yoshitomi Fine Chemicals, Ltd. considers that significant chronic exposure is not an issue for RYH–86 as it is to be used and that the subchronic studies do not suggest that any unusual toxicity (other than GI irritation which is likely to be dose-limiting) will likely be seen in chronic toxicity studies. Indeed, the registration of RYH–86 Slimicide (EPA Reg. No. 63898–1) was supported by the Antimicrobials Data Call-in set of requirements and these provide specifically that chronic toxicity and oncogenicity studies for antimicrobial agents are required only if the results of subchronic toxicity or of gene toxicity studies indicate a potential concern or if there will, in fact, be significant chronic exposure.

4. *Oncogenicity.* Oncogenicity studies (2–year rat and 18–months mouse) have not been conducted with RYH–86 due to the fact that its intended use pattern: (a) does not involve a potential for chronic or long term, frequent occupational exposure; (b) leads only to negligible dietary exposure [see below]; (c) the only notable adverse effect observed in subchronic gavage with the rat was GI irritation / ulceration with no evidence for metaplasia, dysplasia, altered foci, or peroxisome proliferation observed[1]; and, (d) RYH–86 is not mutagenic or genotoxic (see No. 6, below). Accordingly, Yoshitomi Fine Chemicals, Ltd. considers that significant chronic exposure is not an issue for RYH–86 as it is to be used and that the subchronic studies do not suggest that any unusual toxicity (other than GI irritation which is likely to be dose-limiting) or oncogenicity is likely to be seen in chronic toxicity / oncogenicity studies. Indeed, the registration of RYH–86 Slimicide (EPA Reg. No. 63898–1) was supported by the Antimicrobials Data Call-in set of requirements and these provide specifically that chronic toxicity and oncogenicity studies for antimicrobial agents are required only if the results of subchronic toxicity or of gene toxicity studies indicate a potential concern or if there will, in fact, be significant chronic exposure.

5. *Developmental toxicity.* i. *Rats* - A standard Guideline 83–3 design teratology and developmental effects study (MRID 42680801) was conducted in which maternal toxicity (as evidenced by decreases in body weight, body weight gain, food consumption, and thickening of the stomach mucosa) was observed at 45 mg/Kg/ day. At this dose (the highest dose tested) no developmental or teratological effects were observed. In this study, doses of 15 mg/Kg and lower were not toxic to the dams and there were no developmental or teratological effects at these lower doses. The dose selection for this study was based on the observed GI effects in the rat 90–day gavage study.

ii. *Rabbits or mice* - Based on: (a) the lack of any suggestion of teratological or developmental effects at doses which produced frank maternal toxicity in the rat; (b) that the toxicity of RYH–86 in the rat study appeared to be largely a function of its GI effects; and, (c) the low exposure potential associated with RYH–86 in its intended uses, Yoshitomi Fine Chemicals, Ltd. considers that conduct of a second species developmental effect study is not needed to characterize the toxicology of RYH–86. Indeed, the registration of RYH–86 Slimicide (EPA Reg. No. 63898–1) was supported by the Antimicrobials Data Call-in set of requirements and these provide specifically that second species developmental toxicity studies for antimicrobial agents are required only if the results of studies in the first species indicate a potential concern or if there will, in fact, be significant exposure to females of child bearing age. The conclusion that a second species developmental toxicity study for RYH–86 is not needed has been reached to date by the Swedish, Finnish, and Canadian regulatory authorities in addition to EPA.

6. *Genotoxicity.* In the standard Ames test (5-strains), RYH–86 is non-mutagenic with or without metabolic activation (MRID 42897501). In the mouse, *in vivo,* bone marrow

[1] Suggesting that the more typical forms of pre-neoplastic lesions or lesions which have been associated with indirect carcinogenesis, and which can often be observed already within 90–day studies, are not present.

micronucleus test RYH–86 did not induce chromosome aberrations (MRID 41531122). In the rat hepatocyte UDS (unscheduled DNA synthesis) test, RYH–86 did not induce unscheduled DNA synthesis (MRID 41531123). On the basis of this genotoxicity battery, Yoshitomi Fine Chemicals, Ltd. concludes that RYH–86 is not mutagenic or genotoxic.

7. *Metabolism*. Specific mammalian metabolism studies with RYH–86 have not been conducted for the following reasons: (a) at the alkaline pH of the small intestine, RYH–86 will hydrolyze rapidly with release of chloride and active chlorine; and, (b) the toxicology profile for RYH–86 indicates that the principle effect of RYH–86 is GI irritancy and that metabolism does not appear to play a significant role in the toxicology of RYH–86. Therefore, Yoshitomi Fine Chemicals, Ltd. considers that mammalian metabolism studies in the rat with RYH–86 will not provide additional useful information on the safety of RYH–86 and such studies were not required by EPA to support the registration of RYH–86 Slimicide (EPA Reg. No. 63898–1).

8. *Reference Dose (RfD)*. EPA has not previously set a RfD for RYH–86 since at the time of registration review for RYH–86 Slimicide (EPA Reg. No. 63898–1) the regulation of RYH–86 residues in food contact paper and paperboard was under the jurisdiction of the Food and Drug Administration (FDA). Enactment of the Food Quality Protection Act transferred jurisdiction over these residues to EPA. Based on the subchronic NOEL of 3.8 mg/Kg/day (for gastro-intestinal (GI) irritation effects) and an uncertainty factor (UF) of 100, Yoshitomi Fine Chemicals, Ltd. proposes an RfD set at 0.038 mg/Kg/day for RYH–86. Such an RfD leads to the following allowable daily intakes (ADI) for adult males and females and for children: Adult male, 70 Kg, ADI = 2.7 mg/day; Adult female, 60 Kg, ADI = 2.3 mg/day; Child, 20 Kg, ADI = 0.76 mg/day. Yoshitomi Fine Chemicals, Ltd. has considered the possible special sensitivity to RYH–86 of infants and children and, also, of sensitive individuals. The proposed RfD is based on a physico-chemical effect of RYH–86: gastro-intestinal irritation. This, Yoshitomi Fine Chemicals, Ltd. suggests is not an effect for which any wide differences between infants / children and adults would be expected on a reasonable scientific basis. The irritant effects of RYH–86 on the GI tract are expected to be a function of the concentration of RYH–86 in the GI tract and this will be a function of amount of RYH–86 per unit of body weight. Thus, an RfD set at 0.038 mg/Kg/day will lead to similar GI tract concentrations of RYH–86 in adults, children, and infants. Also, since the effect of irritation is a physico-chemical effect, the existence of metabolic differences among persons is not reasonably expected to be a factor producing individuals with special sensitivity to RYH–86. Also, since: (a) physico-chemical effects like irritancy usually do not at all occur well below a threshold concentration of irritant; and, (b) the RfD is based on gavage studies in which RYH–86 is directly delivered to the gastric compartment whereas daily dietary consumption of the RfD amount leads to a lower peak GI tract level than would occur after gavage administration of the RfD amount, it can be expected that even for persons with pre-existing conditions such as ulcers, colitis, and similar pathologies that dietary exposures to RYH–86 at levels up to the proposed RfD will not exacerbate such conditions. Therefore, Yoshitomi Fine Chemicals, Ltd. believs that the proposed RfD is suitable for adults, children, infants, and persons with pre-existing GI tract disturbances.

C. Aggregate Exposure

1. *Dietary exposure* —— i. *Food*. GC-MS-SIM analysis of approximately 30 paper and paperboard samples manufactured in a papermill which used RYH–86 amended slurry water revealed no detectable RYH–86 with a detection limit of 100 µg/Kg of paper (i.e., 100 ppb). Extraction of such samples with food simulating solvents (FSL's), using standard FDA methods for determining food additive extractives from food-contact materials which allowed for the equilibration of RYH–86 between the paper and paperboard samples and the FSL's for 10-days, revealed no RYH–86 migration into FSL's at detection limits of 10 µg/Kg for aqueous FSL's and 100 µg/Kg for fatty FSL's (using the same GC-MS-SIM method for analysis). Using a standard equation provided by U.S. FDA for estimating dietary exposure to indirect food additives migrating from food packaging[2], the hypothetical worst case potential for dietary exposure to RYH–86 as a result of migration into foods of RYH–86 residuals in food contact paper and paperboard is:

$$<M> = f_{\text{aqueous and acidic}} (M_{10 \text{ percent ethanol}}) + f_{\text{alcohol}} (M_{50 \text{ percent ethanol}}) + f_{\text{fatty}} (M_{\text{fatty}})$$

In which, for un-coated food contact paper and paperboard, the food type distribution factors ($f_{\text{food type}}$) are:

$f_{\text{aqueous and acidic}}$ 0.57 + 0.01 = 0.58
f_{alcohol} 0.01
f_{fatty} 0.41

and <M> is the concentration of residues in food when the solvent to sample extraction ratio is 10 ml/sq. inch of sample surface (which was the case for Yoshitomi Fine Chemicals, Ltd.'s residue migration potential studies).

For the worst case, since no RYH–86 was detected in any of the FSLs, Yoshitomi Fine Chemicals, Ltd. has taken the migration values (M) which would result if RYH–86 were present in the FSLs at the limit of detection for the relevant food simulating solvent type:

$M_{10 \text{ percent ethanol}}$ 10 µg/Kg
$M_{50 \text{ percent ethanol}}$ 10 µg/Kg
M_{fatty} 100 µg/Kg

In which case the overall migrant load, <M> is:

$<M> = (0.58 \times 10 \text{ µg/Kg}) + (0.01 \times 10 \text{ µg/Kg}) + (0.41 \times 100 \text{ µg/Kg}) = 47 \text{ µg/Kg}$

The above value of <M> can then be used for derivation of the estimated daily intake (EDI) for adults from the following FDA formula:[3]

$EDI = 3.0 \text{ Kg food/day} \times <M> \times CF$

where CF is the consumption factor for foods contacted by a given type of material. In the case of paper and paperboard, CF = 0.1 for uncoated paper (see footnote 2). Therefore, as a worst case, the potential adult EDI for RYH–86 which derives from possible residuals in food contact paper and paperboard is:

$EDI = 3.0 \text{ Kg food/day} \times 47 \text{ µg/Kg food} \times 0.1 = 14.1 \text{ µg/day}$

For children, the daily diet is different in quantity. At 6 months age, the daily caloric requirement is 110 cal/Kg body weight and the mean body weight for 6 months infants is 8 Kg. This equates to an 880 Kg/day diet which at an average of 800 cal/Kg[4] is a 1.1 Kg total diet. In the age interval 4 years to 6 years of age (median body weight 20 Kg), the daily calorie requirement is 1,600 cal/day which equates to a 2 Kg total daily diet. The EDI's for infants and children are based on these total diet amounts:

$EDI_{\text{INFANT}} = 1.1 \text{ Kg food/day} \times 47 \text{ µg/Kg} \times 0.1 = 5.2 \text{ µg/day}$

$EDI_{\text{CHILD}} = 2.0 \text{ Kg food/day} \times 47 \text{ µg/Kg} \times 0.1 = 9.4 \text{ µg/day}$

Thus, for a 6 month old infant, for a 20 Kg child (age 4–6), for a 60 Kg

[2] U.S. FDA (1985), ''Recommendations for Chemistry Data for Indirect Food Additive Petitions'', Center for Food Safety and Applied Nutrition, June 1995.

[3] Which considers that ''food'' consists of solid foods as well as beverages consumed.

[4] The adult calorie requirement is 2,400 cal/day for males and females averaged and this in a 3 Kg daily diet provides for calorie density of 800 cal/Kg. For comparison, human breast milk has a calorie density of 700 cal/Kg.

woman, and for a 70 Kg man, the daily intakes associated with the above EDI, expressed as µg/Kg/day and as percent RfD utilization are:

	Dietary Exposure	Percent RfD Utilized
Infant	0.65 µg/Kg/day	1.71
Child	0.47 µg/Kg/day	1.24
Woman	0.24 µg/Kg/day	0.632
Man	0.20 µg/Kg/day	0.526

Yoshitomi Fine Chemicals, Ltd. notes that at 40 CFR 180.1(l) EPA has defined that a ''negligible residue ... Ordinarily ... will add to the diet an amount which will be less than 1/2,000th of the amount that has been demonstrated to have no effect from feeding studies on the most sensitive animal species tested.'' This, for a 100-fold uncertainty factor based RfD, means an RfD utilization of 5% or less. Yoshitomi considers, therefore, that under the hypothetical worst case dietary exposure assessment RYH–86 residues are clearly negligible residues.

i. *Drinking water.* The use of RYH–86 as a slimicide for pulp and paper mills does not provide for entry of RYH–86 into drinking water sources. Spent process water from such sites is treated as waste water, typically on-site, prior to release into surface waters. In a Finnish paper mill, with a use level of 1.5 ppm in the water (as an initial load to the slurry water) no RYH–86 was detected in air or water at sites by the paper making machine (detection limits were 4.5 ng/L in water and 3×10^{-6} mg/dm^3). Water samples which were examined included samples from the waste water holding pond and discharge from the on-site waste water treatment plant.

2. *Non-dietary exposure.* RYH–86 is an industrial-use slimicide whose only other registered use (i.e., aside from slimicide use in pulp and paper mills) is as a slime control agent in re-circulating cooling water. All of the uses of RYH–86 involve only occupational exposures. There are no registrations and no intended uses in residential scenarios. There are, therefore, no Food Quality Protection Act covered non-dietary exposures to RYH–86.

D. Cumulative Effects

There is no reliable information to indicate that RYH–86 has a common mechanism of toxicity with any other chemical compound.

E. Safety Determination

1. *U.S. population.* Since the use of RYH–86 as a slimicide in pulp and paper mills is, under hypothetical worst case conditions, anticipated to lead to only negligible adult dietary exposures (i.e., not greater than 0.63% of the RfD for adults with ''negligible'' defined at 40 CFR 180.1(l) as ''ordinarily'' not greater than 5% of the RfD) Yoshitomi Fine Chemicals, Ltd. concludes that there is a reasonable certainty that no harm to the general adult population will result from dietary exposure to RYH–86 residues which could occur in food contact paper and paperboard produced in pulp and paper mills utilizing RYH–86 for slime control in accordance with its FIFRA labeling.

2. *Infants and children.* Since the use of RYH–86 as a slimicide in pulp and paper mills is, under hypothetical worst case conditions, anticipated to lead to only negligible dietary exposures (i.e., not greater than 1.71% of the RfD for infants and not greater than 1.24% of the RfD for children with ''negligible'' defined at 40 CFR 180.1(l) as ''ordinarily'' not greater than 5% of the RfD) Yoshitomi Fine Chemicals, Ltd. concludes that there is a reasonable certainty that no harm to infants and children will result from dietary exposure to RYH–86 residues which could occur in food contact paper and paperboard produced in pulp and paper mills utilizing RYH–86 for slime control in accordance with its FIFRA labeling.

3. *Sensitive individuals.* The RfD for RYH–86 is based on gastro-intestinal irritation as the effect which occurs at lowest dose in animal gavage studies. Since the effect of irritation is a physico-chemical effect, the existence of metabolic differences among persons is not reasonably expected to be a factor producing individuals with special sensitivity to RYH–86. Also, since: (a) physico-chemical effects like irritancy usually do not at all occur well below a threshold concentration of irritant; and, (b) the RfD is based on gavage studies in which RYH–86 is directly delivered to the gastric compartment whereas daily dietary consumption of the RfD amount leads to a lower peak GI tract level than would occur after gavage administration of the RfD amount, it can be expected that even for persons with pre-existing conditions such as ulcers, colitis, and similar pathologies that dietary exposures to RYH–86 at levels up to the proposed RfD will not exacerbate such conditions. Therefore, Yoshitomi Fine Chemicals, Ltd. concludes that there is a reasonable certainty that no harm to persons with pre-existing GI-tract problems will result from dietary exposure to RYH–86 residues which could occur in food contact paper and paperboard produced in pulp and paper mills utilizing RYH–86 for slime control in accordance with its FIFRA labeling.

F. International Tolerances

There are no Codex maximum residue levels (MRLs) established for residues of RYH–86 resulting from the use of RYH–86.

[FR Doc. 97–25338 Filed 9–23–97; 8:45 am]

BILLING CODE 6560–50–F

FEDERAL COMMUNICATIONS COMMISSION

[Report No. 2225]

Petitions for Reconsideration and Clarification of Action in Rulemaking Proceedings

September 19, 1997.

Petitions for reconsideration and clarification have been filed in the Commission's rulemaking proceedings listed in this Public Notice and published pursuant to 47 CFR Section 1.429(e). The full text of these documents are available for viewing and copying in Room 239, 1919 M Street, N.W., Washington, D.C. or may be purchased from the Commission's copy contractor, ITS, Inc. (202) 857–3800. Oppositions to these petitions must be filed October 9, 1997. See Section 1.4(b)(1) of the Commission's rule (47 CFR 1.4(b)(1)). Replies to an opposition must be filed within 10 days after the time for filing oppositions has expired.

Subject: Amendment of Part 90 of the Commission's Rules to Facilitate Future Development of SMR Systems in the 800 MHz Frequency Band (PR Docket No. 93–144, RMs–8117,8030,8029).

Implementation of Sections 3(n) and 322 of the Communications Act Regulatory Treatment of Mobile Services (GN Docket No. 93–252).

Implementation of Section 309(j) of the Communications Act—Competitive Bidding (PP Docket No. 93–253).

Number of Petitions Filed: 6.

Subject: Amendment of Part 90 of the Commission's Rules to Facilitate Future Development of SMR Systems in the 800 MHz Frequency Band (PR Docket No. 93–144, RMs–8117,8030,8029).

Implementation of Sections 3(n) and 322 of the Communications Act Regulatory Treatment of Mobile Services (GN Docket No. 93–252).

Implementation of Section 309(j) of the Communications Act—Competitive Bidding (PP Docket No. 93–253).

Number of Petitions Filed: 3.

Subject: Amendment of parts 2 and 15 of the Commission's Rules to Deregulate the Equipment Authorization Requirements for Digital Devices (ET Docket No. 95–19).

Number of Petitions Filed: 2.

Subject: Amendment of the Commission's Rules to Relocate the Digital Electronic Message Service from the 18 GHz band to the 24 GHz band for Fixed Service (ET Docket No. 97–99).

Number of Petitions Filed: 2.

Subject: Applicant for Authorizations and Licenses of Certain Stations in Various Services (WT Docket No. 97–115).

Number of Petitions Filed: 5.

Federal Communications Commission.

Shirley Suggs,

Chief, Publications Branch.

[FR Doc. 97–25271 Filed 9–23–97; 8:45 am]

BILLING CODE 6712–01–M

FEDERAL RESERVE SYSTEM

Sunshine Act Meeting

AGENCY HOLDING THE MEETING: Board of Governors of the Federal Reserve System.

TIME AND DATE: 12:00 noon, Monday, September 29, 1997.

PLACE: Marriner S. Eccles Federal Reserve Board Building, C Street entrance between 20th and 21st Streets, N.W., Washington, D.C. 20551.

STATUS: Closed.

MATTERS TO BE CONSIDERED:

1. Personnel actions (appointments, promotions, assignments, reassignments, and salary actions) involving individual Federal Reserve System employees.

2. Any items carried forward from a previously announced meeting.

CONTACT PERSON FOR MORE INFORMATION: Mr. Joseph R. Coyne, Assistant to the Board; (202) 452–3204. You may call (202) 452–3207, beginning at approximately 5 p.m. two business days before this meeting, for a recorded announcement of bank and bank holding company applications scheduled for the meeting.

Dated: September 19, 1997.

Jennifer J. Johnson,

Deputy Secretary of the Board.

[FR Doc. 97–25407 Filed 9–19–97; 5:06 pm]

BILLING CODE 6210–01–P

FEDERAL TRADE COMMISSION

Sunshine Act Meeting

AGENCY HOLDING THE MEETING: Federal Trade Commission.

TIME AND DATE: 12:00 p.m., Friday, November 7, 1997.

PLACE: Federal Trade Commission Building, Room 532, 6th Street and Pennsylvania Avenue, N.W., Washington, D.C. 20580.

STATUS: Parts of this meeting will be open to the public. The rest of the meeting will be closed to the public.

MATTERS TO BE CONSIDERED: Portions Open to Public: (1) Oral Argument in Brake Guard Products, Inc., Docket 9277

Portions Closed to the Public: (2) Executive Session to follow Oral Argument in Brake Guard Products, Inc., Docket 9277.

CONTACT PERSON FOR MORE INFORMATION: Victoria Streitfeld, Office of Public Affairs: (202) 326–2180. Recorded Message: (202) 326–2711.

Donald S. Clark,

Secretary.

[FR Doc. 97–25521 Filed 9–22–97; 3:40 pm]

BILLING CODE 6750–01–M

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Office of the Secretary

Agency Information Collection Activities: Submission for OMB Review; Comment Request

The Department of Health and Human Services, Office of the Secretary publishes a list of information collections it has submitted to the Office of Management and Budget (OMB) for clearance in compliance with the Paperwork Reduction Act of 1995 (44 U.S.C. Chapter 35) and 5 CFR 1320.5. The following are those information collections recently submitted to OMB.

1. Study of the Implementation of the Office of Minority Health's Bilingual/Bicultural Service Demonstration Program—NEW—The Office of Minority Health proposes to survey sites participating in its Bilingual/Bicultural demonstration grant program to obtain general information on how the program is being implemented. *Type of Respondents:* demonstration sites; *Number of Respondents:* 47; *Burden Estimate per Response to Verification Survey:* 4 hours; *Total Burden for Verification Survey:* 188 hours; *Burden Estimate per Response to Telephone Interview:* 1 hour; *Total Burden for Telephone Interview:* 47 hours. *Total Study Burden:* 235 hours.

OMB Desk Officer: Allison Eydt.

Copies of the information collection packages listed above can be obtained by calling the OS Reports Clearance Officer on (202) 690–6207. Written comments and recommendations for the proposed information collection should be sent directly to the OMB desk officer designated above at the following address: Human Resources and Housing Branch, Office of Management and Budget, New Executive Office Building, Room 10235, 725 17th Street N.W., Washington, D.C. 20503.

Comments may also be sent to Cynthia Agens Bauer, OS Reports Clearance Officer, Room 503H, Humphrey Building, 200 Independence Avenue S.W., Washington DC, 20201. Written comments should be received within 30 days of this notice.

Dated: September 12, 1997.

Dennis P. Williams,

Deputy Assistant Secretary, Budget.

[FR Doc. 97–25263 Filed 9–23–97; 8:45 am]

BILLING CODE 4150–04–M

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

Advisory Committee; Notice of Meeting

AGENCY: Food and Drug Administration, HHS.

ACTION: Notice.

This notice announces a forthcoming meeting of a public advisory committee of the Food and Drug Administration (FDA). The meeting will be open to the public.

Name of Committee: Ophthalmic Devices Panel of the Medical Devices Advisory Committee.

General Function of the Committee: To provide advice and recommendations to the agency on FDA regulatory issues.

Date and Time: The meeting will be held on October 20, 1997, 9 a.m. to 5 p.m., and October 21, 1997, 8:30 a.m. to 5 p.m.

Location: Holiday Inn, Walker and Whetstone Rooms, Two Montgomery Village Ave., Gaithersburg, MD.

Contact Person: Sara M. Thornton, Center for Devices and Radiological Health (HFZ–460), Food and Drug Administration, 9200 Corporate Blvd., Rockville, MD 20850, 301–594–2053, or FDA Advisory Committee Information Line, 1–800–741–8138 (301–443–0572 in the Washington, DC area), code 12396, or from the Internet: http://

www.fda.gov. Please call the Information Line for up-to-date information on this meeting.

Agenda: On October 20, 1997, the committee will discuss issues relating to a premarket approval application for a surface modified intraocular lens (IOL) in addition to a review of an update of the FDA ''grid'' of historical IOL data. A product development protocol (PDP) based on the draft guidance document for monofocal IOL's will be discussed. On October 21, 1997, the committee will discuss proposed extensions to the draft guidance document for refractive surgical lasers, specifically, clinical criteria for the determination of safety and effectiveness for photorefractive keratectomy (PRK) and laser in-situ keratomileusis (LASIK) for myopia, astigmatism, hyperopia, and other refractive indications. A PDP for excimer lasers for PRK will also be discussed. Single copies of the above-mentioned guidance documents are available to the public by contacting the Division of Small Manufacturers Assistance, 1350 Piccard Dr., Rockville, MD 20851, 1–800–638–2041, or from the Internet: http://www.fda.gov/cdrh/draftgui.html.

Procedure: Interested persons may present data, information, or views, orally or in writing, on issues pending before the committee. Written submissions may be made to the contact person by October 10, 1997. Oral presentations from the public will be scheduled between approximately 8:30 a.m. and 9:30 a.m. on October 20 and 21, 1997. Time allotted for each presentation may be limited. Those desiring to make formal oral presentations should notify the contact person before October 10, 1997, and submit a brief statement of the general nature of the evidence or arguments they wish to present, the names and addresses of proposed participants, and an indication of the approximate time requested to make their presentation.

Notice of this meeting is given under the Federal Advisory Committee Act (5 U.S.C. app. 2).

Dated: September 16, 1997.

Michael A. Friedman,

Deputy Commissioner for Operations.

[FR Doc. 97–25265 Filed 9-23-97; 8:45 am]

BILLING CODE 4160–01–F

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

Advisory Committee; Notice of Meeting

AGENCY: Food and Drug Administration, HHS.

ACTION: Notice.

This notice announces a forthcoming meeting of a public advisory committee of the Food and Drug Administration (FDA). The meeting will be open to the public.

Name of Committee: Dental Plaque Subcommittee Meeting of the Nonprescription Drugs Advisory Committee.

General Function of the Committee: To provide advice and recommendations to the agency on FDA regulatory issues.

Date and Time: The meeting will be held on October 29 and 30, 1997, 8:30 a.m. to 5 p.m.

Location: Holiday Inn, The Ballroom, Two Montgomery Village Ave., Gaithersburg, MD.

Contact Person: Andrea G. Neal, Center for Drug Evaluation and Research (HFD–21), Food and Drug Administration, 5600 Fishers Lane, Rockville, MD 20857, 301–443–5455, or FDA Advisory Committee Information Line, 1–800–741–8138 (301–443–0572 in the Washington, DC area), code 12541. Please call the Information Line for up-to-date information on this meeting.

Agenda: On October 29, 1997, the subcommittee will continue discussion and/or possibly vote on the safety and effectiveness of: C–31G, xylitol, and zinc citrate, as well as the following combination ingredients: (1) Menthol, thymol, eucalyptol, and methyl salicylate; (2) hydrogen peroxide and povidone iodine; and (3) hydrogen peroxide, sodium citrate, zinc chloride, and sodium lauryl sulfate. The subcommittee will also continue discussion of the criteria for over-the-counter (OTC) antiplaque and antigingivitis combination drug products. On October 30, 1997, the subcommittee will discuss the final formulation testing for OTC antiplaque and antigingivitis drug products, and assignments will be made for the review of foreign marketing data supporting OTC antiplaque and antigingivitis ingredients.

Procedure: Interested persons may present data, information, or views, orally or in writing, on issues pending before the subcommittee. Written submissions may be made to the contact person by October 15, 1997. Oral presentations from the public will be scheduled on both days between approximately 9 a.m. and 10 a.m. Time allotted for each presentation may be limited. Those desiring to make formal oral presentations should notify the contact person before October 15, 1997, and submit a brief statement of the general nature of the evidence or arguments they wish to present, the names and addresses of proposed participants, and an indication of the approximate time requested to make their presentation.

Notice of this meeting is given under the Federal Advisory Committee Act (5 U.S.C. app. 2).

Dated: September 15, 1997.

Michael A. Friedman,

Deputy Commissioner for Operations.

[FR Doc. 97–25266 Filed 9-23-97; 8:45 am]

BILLING CODE 4160–01–F

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

Advisory Committee; Notice of Meeting

AGENCY: Food and Drug Administration, HHS.

ACTION: Notice.

This notice announces a forthcoming meeting of a public advisory committee of the Food and Drug Administration (FDA). At least one portion of the meeting will be closed to the public.

Name of Committee: Transmissible Spongiform Encephalopathies Advisory Committee.

General Function of the Committee: To provide advice and recommendations to the agency on FDA regulatory issues.

Date and Time: The meeting will be held on October 6 and 7, 1997, 8:30 a.m. to 5:30 p.m.

Location: Holiday Inn, Versailles Ballrooms I and II, 8120 Wisconsin Ave., Bethesda, MD.

Contact Person: William Freas or Jane S. Brown, Center for Biologics Evaluation and Research (HFM–21), Food and Drug Administration, 1401 Rockville Pike, Rockville, MD 20852, 301–827–0314, or FDA Advisory Committee Information Line, 1–800–741–8138 (301–443–0572 in the Washington, DC area), code 12388. Please call the Information Line for up-to-date information on this meeting.

Agenda: On October 6, 1997, the committee will discuss FDA regulatory controls to address transmission of Creutzfeldt-Jakob Disease (CJD) by human dura mater products. On October 7, 1997, the committee will discuss appropriate FDA actions concerning CJD-implicated ''secondary'' products (i.e., products in which a CJD-implicated plasma derivative was either added as an excipient or used as a reagent in the manufacturing process).

Procedure: On October 6, 1997, from 8:30 a.m. to 5:30 p.m., and October 7,

1997, from 8:30 a.m. to 1:15 p.m., and 1:45 p.m. to 5:30 p.m., the meeting is open to the public. Interested persons may present data, information, or views, orally or in writing, on issues pending before the committee. Written submissions may be made to the contact person by October 1, 1997. Oral presentations from the public will be scheduled between approximately 8:45 a.m. and 9:30 a.m. on both days. Time allotted for each presentation may be limited. Those desiring to make formal oral presentations should notify the contact person before October 1, 1997, and submit a brief statement of the general nature of the evidence or arguments they wish to present, the names and addresses of proposed participants, and an indication of the approximate time requested to make their presentation.

Closed Committee Deliberations: On October 7, 1997, from 1:15 p.m. to 1:45 p.m., the meeting will be closed to permit discussion and review of trade secret and/or confidential commercial or financial information (5 U.S.C. 552b(c)(4)). The meeting will be closed to discuss trade secret and/or confidential information concerning the manufacture of the products under discussion.

FDA regrets that it was unable to publish this notice 15 days prior to the October 6 and 7, 1997, Transmissible Spongiform Encephalopathies Advisory Committee meeting. Because the agency believes there is some urgency to bring this issue to public discussion and qualified members of the Transmissible Spongiform Encephalopathies Advisory Committee were available at this time, the Commissioner concluded that it was in the public interest to hold this meeting even if there was not sufficient time for the customary 15-day public notice.

Notice of this meeting is given under the Federal Advisory Committee Act (5 U.S.C. app. 2).

Dated: September 16, 1997.

Michael A. Friedman,

Deputy Commissioner for Operations.

[FR Doc. 97–25264 Filed 9-23-97; 8:45 am]

BILLING CODE 4160–01–F

DEPARTMENT OF HEALTH AND HUMAN SERVICES

Food and Drug Administration

Advisory Committee; Notice of Meeting

AGENCY: Food and Drug Administration, HHS.

ACTION: Notice.

This notice announces a forthcoming meeting of a public advisory committee of the Food and Drug Administration (FDA). At least one portion of the meeting will be closed to the public.

Name of Committee: Vaccines and Related Biological Products Advisory Committee.

General Function of the Committee: To provide advice and recommendations to the agency on FDA regulatory issues.

Date and Time: The meeting will be held on October 16, 1997, 12:30 p.m. to 3:15 p.m.

Location: Food and Drug Administration, Bldg. 29, conference room 121, 8800 Rockville Pike, Bethesda, MD. This meeting will be held by a telephone conference call. A speaker telephone will be provided in the conference room to allow public participation in the meeting.

Contact Person: Nancy T. Cherry or Denise H. Royster, Center for Biologics Evaluation and Research (HFM–21), Food and Drug Administration, 1401 Rockville Pike, Rockville, MD 20852, 301–827–0314, or FDA Advisory Committee Information Line, 1–800–741–8138 (301–443–0572 in the Washington, DC area), code 12388. Please call the Information Line for up-to-date information on this meeting.

Agenda: The committee will discuss the intramural scientific program of the Laboratory of Pertussis.

Procedure: On October 16, 1997, from 12:30 p.m. to 1:15 p.m., and 2:15 p.m. to 3:15 p.m., the meeting is open to the public. Interested persons may present data, information, or views, orally or in writing, on issues pending before the committee. Written submissions may be made to the contact person by October 9, 1997. Oral presentations from the public will be scheduled between approximately 2:15 p.m. and 3:15 p.m. Time allotted for each presentation may be limited. Those desiring to make formal oral presentations should notify the contact person before October 9, 1997, and submit a brief statement of the general nature of the evidence or arguments they wish to present, the names and addresses of proposed participants, and an indication of the approximate time requested to make their presentation.

Closed Committee Deliberations: On October 16, 1997, from 1:15 p.m. to 2:15 p.m., the meeting will be closed to permit discussion where disclosure would constitute a clearly unwarranted invasion of personal privacy (5 U.S.C. 552b(c)(6)). The meeting will be closed to discuss personal information concerning individuals associated with the research program.

Notice of this meeting is given under the Federal Advisory Committee Act (5 U.S.C. app. 2).

Dated: September 16, 1997.

Michael A. Friedman,

Deputy Commissioner for Operations.

[FR Doc. 97–25267 Filed 9-23-97; 8:45 am]

BILLING CODE 4160–01–F

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

Notice of Availability of a Technical/ Agency Draft Recovery Plan for Gesneria Pauciflora for Review and Comment

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Notice of document availability.

SUMMARY: The U.S. Fish and Wildlife Service announces availability for public review of a technical/agency draft recovery plan for *Gesneria pauciflora* (no common name). This small shrub, designated as threatened, is endemic to Puerto Rico. Only three populations are known to occur in the western mountains of Puerto Rico. The species is threatened by natural disasters and the modification of its highly restricted habitat. The Service solicits review and comments from the public on this draft plan.

DATES: Comments on the draft recovery plan must be received on or before November 24, 1997 to receive consideration by the Service.

ADDRESSES: Persons wishing to review the draft recovery plan may obtain a copy by contacting Ms. Susan Silander, Boquerón Field Office, P.O. Box 491, Boquerón, Puerto Rico 00622. Comments and materials received are available upon request for public inspection, by appointment, during normal business hours at the above address.

FOR FURTHER INFORMATION CONTACT: Ms. Susan Silander, Boquerón Field Office, P.O. Box 491, Boquerón, Puerto Rico 00622, Telephone: 809/851–7297.

SUPPLEMENTARY INFORMATION:

Background

Restoring an endangered or threatened species or plant to the point where it is again a secure, self-sustaining member of its ecosystem is a primary goal of the U.S. Fish and Wildlife Service's endangered species program. To help guide the recovery effort, the Service is working to prepare recovery plans for most of the listed species native to the United States.

Recovery plans describe actions considered necessary for conservation of the species, establish them, and estimate time and cost for implementing the recovery measures needed.

The Endangered Species Act of 1973 (Act), as amended (16 U.S.C. 1531 *et seq.*) requires the development of recovery plans for listed species unless such a plan would not promote the conservation of a particular species. Section 4(f) of the Act, as amended in 1988, requires that public notice and an opportunity for public review and comment be provided during recovery plan development. The Service and other Federal agencies will also take these comments into account in the course of implementing approved recovery plans.

This Technical/Agency Draft is for *Gesneria pauciflora* (no common name), a small gregarious shrub which is currently known from only three populations in the western mountains of Puerto Rico. These occur in the municipalities of Maricao and Sabana Grande. Population estimates are difficult due to the plant's habit of growing in dense mats. At all known localities the species is found growing in rocky stream beds on wet serpentine rock, where water is constantly seeping. The species is threatened by the occurrence of natural disasters and the modification of its highly restricted habitat. The largest population is located in an area of steep unstable slopes and may be threatened by landslides and flood damage. Forest management practices such as trail maintenance may also adversely affect the species. This plan will describe measures necessary to recover the species, including studies of its reproductive biology and propagation.

Public Comments Solicited

The Service solicits written comments on the recovery plan described. All comments received by the date specified above will be considered prior to approval of the plan.

Authority

The authority for this action is Section 4(f) of the Endangered Species Act, 16 U.S.C. 1531.

Dated: September 17, 1997.

Susan R. Silander,

Acting Field Supervisor.

[FR Doc. 97–25335 Filed 9–23–97; 8:45 am]

BILLING CODE 4310–55–P

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

Notice of Availability of a Technical/ Agency Draft Recovery Plan for Mitracarpus Maxwelliae, Mitracarpus Polycladus, and Eugenia Woodburyana for Review and Comment

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Notice of document availability.

SUMMARY: The U.S. Fish and Wildlife Service announces availability for public review of a technical/agency draft recovery plan for *Mitracarpus maxwelliae, Mitracarpus polycladus,* and *Eugenia woodburyana. M. maxwelliae,* a small shrub, and *E. woodburyana,* a small tree, are endemic to southwestern Puerto Rico. *M. polycladus,* a small shrub, is found in southwestern Puerto Rico as well, but is also known from the island of Saba, in the Lesser Antilles. These species are threatened by road construction, recreational activities, wildfires, and land clearing associated with development for agriculture and other purposes. The Service solicits review and comments from the public on this draft plan.

DATES: Comments on the draft recovery plan must be received on or before November 24, 1997 to receive consideration by the Service.

ADDRESSES: Persons wishing to review the draft recovery plan may obtain a copy by contacting Ms. Susan Silander, Boquerón Field Office, P.O. Box 491, Boquerón, Puerto Rico 00622. Comments and materials received are available upon request for public inspection, by appointment, during normal business hours at the above address.

FOR FURTHER INFORMATION CONTACT: Ms. Susan Silander, Boquerón Field Office, P.O. Box 491, Boquerón, Puerto Rico 00622, Telephone: 809/851–7297.

SUPPLEMENTARY INFORMATION:

Background

Restoring an endangered or threatened species or plant to the point where it is again a secure, self-sustaining member of its ecosystem is a primary goal of the U.S. Fish and Wildlife Service's endangered species program. To help guide the recovery effort, the Service is working to prepare recovery plans for most of the listed species native to the United States. Recovery plans describe actions considered necessary for conservation of the species, establish them, and estimate time and cost for implementing the recovery measures needed.

The Endangered Species Act of 1973 (Act), as amended (16 U.S.C. 1531 *et seq.*) requires the development of recovery plans for listed species unless such a plan would not promote the conservation of a particular species. Section 4(f) of the Act, as amended in 1988, requires that public notice and an opportunity for public review and comment be provided during recovery plan development. The Service and other Federal agencies will also take these comments into account in the course of implementing approved recovery plans.

This Technical/Agency Draft is for *Mitracarpus maxwelliae, Mitracarpus polycladus,* and *Eugenia woodburyana* (no common names), three species that are known from the southwestern portion of Puerto Rico. *Mitracarpus maxwelliae* is a low densely-branching, mound-like shrub known only from one locality in the Guánica Commonwealth Forest of arid southwestern Puerto Rico. *M. polycladus,* also a small perennial shrub, is known in Puerto Rico from only two locations in the Guánica Commonwealth Forest, where it grows in crevices and soil pockets of coastal rocks. It is also known from the island of Saba in the Lesser Antilles. *Eugenia woodburyana,* a small evergreen tree reaching 6 feet in height, is endemic to Puerto Rico and is known only from the municipalities of Lajas, Cabo Rojo, and Guánica in southwestern Puerto Rico. It is known from the Guánica Commonwealth Forest and the Cabo Rojo National Wildlife Refuge, publicly owned land, as well as privately-owned land. These three species are threatened by road construction, recreational activities, wildfires, and land clearing associated with urban, rural, tourist and agricultural development. This plan will describe measures necessary to recover the species, including studies of its reproductive biology and propagation.

Public Comments Solicited

The Service solicits written comments on the recovery plan described. All comments received by the date specified above will be considered prior to approval of the plan.

Authority

The authority for this action is Section 4(f) of the Endangered Species Act, 16 U.S.C. 1531.

Dated: September 17, 1997.

Susan R. Silander,

Acting Field Supervisor.

[FR Doc. 97–25336 Filed 9–23–97; 8:45 am]

BILLING CODE 4310–55–P

DEPARTMENT OF THE INTERIOR

Bureau of Land Management

[NM–030–1990–00]

Final Environmental Impact Statement (FEIS) for the Little Rock Mine Project, Grant County, NM

AGENCY: Bureau of Land Management (BLM), Interior.

ACTION: Notice of availability.

SUMMARY: In accordance with section 102(2)(c) of the National Environmental Policy Act, the Mimbres Resource Area has prepared a FEIS analyzing the potential environmental impacts of the proposed re-establishment, operation, and reclamation of the Little Rock Mine Project located approximately 7 miles south of Silver City, New Mexico. The proposed project would also require the construction of a haul road that would enable Phelps Dodge Mining Company (PDMC) to transport ore from the Little Rock Mine pit to existing Tyrone operations for processing. The permit area is approximately 600 acres of which the proposed mine pit would cover 190 acres and the haul road 40 acres.

DATES: Written comments on the FEIS must be submitted or postmarked no later than October 27, 1997.

ADDRESSES: Written comments should be sent to: Juan S. Padilla, Team Coordinator, BLM, Las Cruces District, 1800 Marquess, Las Cruces, NM 88005.

FOR FURTHER INFORMATION CONTACT: Juan S. Padilla, Team Coordinator at (505) 525–4376.

SUPPLEMENTARY INFORMATION: Those individuals, organizations, Native American tribes, agencies, and other government agencies with a known interest in the proposal have been sent a copy of the FEIS. Single copies of the document are available from the BLM Las Cruces District Office, 1800 Marquess, Las Cruces, New Mexico and the BLM New Mexico State Office, 1474 Rodeo Road, Santa Fe, New Mexico. Reading copies are available for review at public and university libraries in Las Cruces, Silver City, Deming, Lordsburg, Socorro, and Santa Fe, New Mexico. Following the 30-day availability of this FEIS, a Record of Decision (ROD) will be issued.

Dated: September 18, 1997.

Linda S.C. Rundell,

District Manager.

[FR Doc. 97–25309 Filed 9–23–97; 8:45 am]

BILLING CODE 4310–VC–P

DEPARTMENT OF THE INTERIOR

Bureau of Land Management

[ES–020–07–1430–00]

Notice of Intent To Prepare Planning Analysis

AGENCY: Bureau of Land Management, Interior.

ACTION: Notice of intent.

SUMMARY: The Jackson District Office, Eastern States, will prepare a Planning Analysis/Environmental Assessment (PA/EA) for the public lands within the state of Louisiana which are administered by the Bureau of Land Management (BLM).

The planning effort will follow the procedures set forth in 43 CFR, subpart 1600.

The public is invited to participate in the planning process, beginning with the identification of planning issues and criteria. Planning criteria include applicable laws, regulations, and policies. Additional criteria will be developed if identified through public participation activities. The PA/EA will be prepared by an interdisciplinary team.

DATES: Comments relating to the identification of planning issues and criteria will be accepted through November 1, 1997.

ADDRESSES: Send comments to District Manager, Bureau of Land Management, Jackson District, 411 Briarwood Drive, Suite 404, Jackson, Mississippi 39206.

FOR FURTHER INFORMATION CONTACT: Clay W. Moore, PA/EA Team Leader, (601) 977–5400.

SUPPLEMENTARY INFORMATION: The PA/EA will guide future use of approximately 2,400 acres of public domain land, comprised of small parcels of land located throughout the State.

The anticipated issues for the PA/EA include the following: (1) Land ownership adjustments and (2) special management areas. These issues are preliminary and subject to change as a result of public input.

The PA/EA will be developed by an interdisciplinary team composed of specialists in realty, wildlife, forestry, cultural resources, visual resources, recreation, fire management, soil, water and air. Additional technical support will be provided by other specialists as needed.

Public participation will be an important part of the planning process. It is intended that all interested or affected parties be involved. The planning team will seek public input by direct mailings, person-to-person contacts, and coordination with local, state, and other federal agencies. Agency coordination meetings and public meetings may be held to obtain input on issues and planning criteria. Public meetings, if any, will be scheduled at a later time.

Complete records of all phases of the planning process will be available for public review at the Jackson District Office. Copies of the PA/EA will be available upon request.

Dated: September 11, 1997.

Bruce E. Dawson,

Field Manager.

[FR Doc. 97–25310 Filed 9–23–97; 8:45 am]

BILLING CODE 4310–GJ–M

DEPARTMENT OF THE INTERIOR

Minerals Management Service

Agency Information Collection Activities: Proposed Collection; Comment Request

AGENCY: Minerals Management Service (MMS), Interior.

ACTION: Notice of revision of a currently approved information collection (OMB Control Number 1010–0049).

SUMMARY: As part of its continuing effort to reduce paperwork and respondent burden, MMS invites the public and other Federal agencies to comment on a proposal to extend and revise the currently approved collection of information discussed below. The Paperwork Reduction Act of 1995 (PRA) provides that an agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid Office of Management and Budget (OMB) control number.

DATES: Submit written comments by November 24, 1997.

ADDRESSES: Mail or hand carry comments to the Department of the Interior; Minerals Management Service; Mail Stop 4020; 381 Elden Street; Herndon, Virginia 20170–4817; attention: Rules Processing Team.

FOR FURTHER INFORMATION CONTACT: Alexis London, Rules Processing Team, telephone (703) 787–1600. You may also contact Alexis London to obtain a copy of the collection of information at no cost.

SUPPLEMENTARY INFORMATION:

Title: 30 CFR part 250, subpart B, Exploration and Development and Production Plans.

Abstract: The Outer Continental Shelf Lands Act (OCSLA), as amended, 43

U.S.C. 1331 *et seq.*, requires the Secretary of the Interior (Secretary) to preserve, protect, and develop offshore oil and gas resources; to make such resources available to meet the Nation's energy needs as rapidly as possible; to balance orderly energy resource development with protection of the human, marine, and coastal environments; to ensure the public a fair and equitable return on the resources of the OCS; and to preserve and maintain free enterprise competition. Section 11 of the amended OCLSA requires the holders of OCS oil and gas and sulphur leases to submit exploration or development and production plans for approval prior to commencing these activities. The implementing regulations and associated information collection requirements are contained in 30 CFR part 250, subpart B, Exploration and Development and Production Plans. In addition, the MMS Regions have issued Notices to Lessees and Operators (NTLs) that provide supplementary guidance and procedures applicable to each Region or nationally. These NTLs address the various surveys, reports, plans (including supplemental deep water operations plans and conservation information for the Gulf of Mexico (GOM) Region), etc., that are necessary for MMS to approve the exploration or development and production activities.

The MMS engineers, geologists, geophysicists, and environmental scientists use the information collected under 30 CFR part 250, subpart B, and related NTLs, to analyze and evaluate the planned operations to ensure that they will not adversely affect the marine, coastal, or human environment and that they conserve the resources of the OCS. It would be impossible for the Regional Supervisor to make an informed decision on whether to approve the proposed plans, or whether modifications are necessary, without the analysis and evaluation of the required information. The affected States also review the information collected for consistency with approved Coastal Zone Management plans.

The MMS will protect proprietary information submitted with the plans in accordance with the Freedom of Information Act; 30 CFR part 250.18, Data and information to be made available to the public; and 30 CFR part 252, OCS Oil and Gas Information Program. No items of a sensitive nature are collected. Responses are mandatory.

Estimated Number and Description of Respondents: Approximately 130 Federal OCS sulphur or oil and gas lessees.

Frequency: The frequency of reporting is on occasion.

Estimated Annual Reporting and Recordkeeping Hour Burden: 177,440 reporting burden hours; 260 recordkeeping burden hours. The estimated average burden per response is:

(1) Preliminary activities: 1 hour per notice.

(2) Exploration or development and production plans: 480 hours per plan.

(3) GOM Region Deepwater Operations Plans: 480 hours per plan.

(4) Revised plans: 80 hours per revision.

(5) Recordkeeping: 2 hours per respondent.

Estimated Annual Reporting and Recordkeeping Cost Burden: The MMS has identified no burdens associated with this collection of information.

Comments: The MMS will summarize written responses to this notice and address them in its submission for OMB approval. All comments will become a matter of public record. As a result of comments we receive and our consultations with a representative sample of respondents, we will make any necessary adjustments to the burden in our submission to OMB. In calculating the burden, MMS assumed that respondents perform many of the requirements and maintain records in the normal course of their activities. The MMS considers these to be usual and customary and took that into account in estimating the burden.

(1) The MMS specifically solicits comments on the following questions:

(a) Is the proposed collection of information necessary for MMS to properly perform its functions, and will it be useful?

(b) Are the estimates of the burden hours of the proposed collection reasonable?

(c) Do you have any suggestions that would enhance the quality, clarity, or usefulness of the information to be collected?

(d) Is there a way to minimize the information collection burden on respondents, including through the use of appropriate automated electronic, mechanical, or other forms of information technology?

(2) In addition, the PRA requires agencies to estimate the total annual reporting and recordkeeping cost burden to respondents or recordkeepers resulting from the collection of information. We need to know if you have any. Your response should split the cost estimate into two components:

(a) Total capital and startup cost component; and

(b) Annual operation, maintenance, and purchase of service components. Your estimates should consider the costs to generate, maintain, and disclose or provide the information. You should describe the methods you use to estimate major cost factors, including system and technology acquisition, expected useful life of capital equipment, discount rate(s), and the period over which you incur costs. Capital and startup costs include, among other items, computers and software you purchase to prepare for collecting information; monitoring, sampling, drilling, and testing equipment; and record storage facilities. Generally, your estimates should not include equipment or services purchased: (i) Before October 1, 1995; (ii) to comply with requirements not associated with the information collection; (iii) for reasons other than to provide information or keep records for the Government; or (iv) as part of customary and usual business or private practices.

MMS Information Collection Clearance Officer: Jo Ann Lauterbach, (202) 208–7744.

Dated: September 18, 1997.

E.P. Danenberger,

Chief, Engineering and Operations Division.

[FR Doc. 97–25348 Filed 9–23–97; 8:45 am]

BILLING CODE 4310–MR–P

DEPARTMENT OF THE INTERIOR

National Park Service

Notice of Inventory Completion for Native American Human Remains and Associated Funerary Objects from Lake Texoma, OK in the Possession of the United States Army Corps of Engineers, Tulsa District, Tulsa, OK

AGENCY: National Park Service.

ACTION: Notice.

Notice is hereby given in accordance with provisions of the Native American Graves Protection and Repatriation Act (NAGPRA), 25 U.S.C. 3003 (d), of the completion of an inventory of human remains and associated funerary objects from Lake Texoma, OK in the possession of the United States Army Corps of Engineers, Tulsa District, Tulsa, OK.

A detailed assessment of the human remains was made by U.S. Army Corps-Tulsa District professional staff in consultation with representatives of the Chickasaw Nation of Oklahoma.

In 1971, human remains representing two individuals were exposed during a work project at site 34Jn30, Lake Texoma, Johnson County, OK and removed by University of Oklahoma staff. No known individuals were

identified. The 114 associated funerary objects included an iron padlock, a silver pendant, ceramics, glass seed beads, dark green glass sherds, animal bones, metal fragments, buttons, knife blades, a clay pipe, a screw, mussel shell, and stone flakes, however, these objects have not been located within the collections of the original curating institution, the University of Oklahoma.

Morphological evidence based on shoveled incisors indicates these individuals are Native American. The recorded associated funerary objects indicate these burial date to between c.1850—1890 A.D. During this time, site 34JN30 was located within the exclusive territory of the Chickasaw Nation of Oklahoma, and was allotted between 1901 and 1906 to Mr. Bluford J. Greer and Ms. Sophia R. Arpealer, two Chickasaw citizens.

During 1986–1987, human remains representing a minimum of four individuals were exposed by shoreline erosion at site 34MA15, Lake Texoma, Marshall County, OK and recovered by Army Corps-Tulsa District personnel. No known individuals were identified. The eleven associated funerary objects include three triangular-wire looped thumbscrews, one heart-shaped looped wire, one ribbon and bow decorative metal coffin hardware, one pair of decorative metal leaves coffin hardware, one decorative metal bird or flower hardware, and one metal coffin handle fragment with two screws.

Based on the coffin hardware, these burials are estimated to date between the late 1800s and the early 1900s. Morphological evidence, including curved femurs, indicates that three of these individuals are Native American. The fourth individual, a young adult woman found commingled with the remains of one of the Native American men, shows Caucasian facial morphology. Site 34Ma15 is located within an allotment held in the early 1900s by Mr. John Edward Mayo, Mr. William Phillip Mayo, and Mr. James D. Mayo, all of whom were Chickasaw citizens.

Based on the above mentioned information, officials of the U.S. Army Corps of Engineers, Tulsa District have determined that, pursuant to 43 CFR 10.2 (d)(1), the human remains listed above represent the physical remains of five individuals of Native American ancestry. Officials of the U.S. Army Corps of Engineers, Tulsa District have also determined that, pursuant to 25 U.S.C. 3001 (3)(A), the eleven objects listed above are reasonably believed to have been placed with or near individual human remains at the time of death or later as part of the death rite or ceremony. Lastly, officials of the U.S. Army Corps of Engineers, Tulsa District have determined that, pursuant to 25 U.S.C. 3001 (2), there is a relationship of shared group identity which can be reasonably traced between these Native American human remains and associated funerary objects and the Chickasaw Nation of Oklahoma.

This notice has been sent to officials of the Chickasaw Nation of Oklahoma. Representatives of any other Indian tribe that believes itself to be culturally affiliated with these human remains and associated funerary objects should contact Mr. Robert W. Jobson, NAGPRA Coordinator, Planning Division, U.S. Army Corps of Engineers, Tulsa district, P.O. Box 61, Tulsa, OK 74121–0061, telephone (918) 669–7193 , before October 24, 1997. Repatriation of the human remains and associated funerary objects to the Chickasaw Nation of Oklahoma may begin after that date if no additional claimants come forward.

Dated: September 16, 1997.

C. Timothy McKeown,

Acting Departmental Consulting Archeologist, Archeology and Ethnography Program.

[FR Doc. 97–25308 Filed 9–23–97; 8:45 am]

BILLING CODE 4310–70–F

DEPARTMENT OF THE INTERIOR

Office of Surface Mining Reclamation and Enforcement

Notice of Proposed Information Collection

AGENCY: Office of Surface Mining Reclamation and Enforcement, Interior.

ACTION: Notice and request for comments.

SUMMARY: In compliance with the Paperwork Reduction Act of 1995, the Office of Surface Mining Reclamation and Enforcement (OSM) is announcing that the information collection request for the title described below has been forwarded to the Office of Management and Budget (OMB) for review and comment. The information collection request describes the nature of the information collection and the expected burden and cost.

DATES: Comments must be submitted on or before October 24, 1997, to be assured of consideration.

FOR FURTHER INFORMATION CONTACT: To request a copy of the information collection request, explanatory information and related form, contact John A. Trelease at (202) 208–2783.

SUPPLEMENTARY INFORMATION: The Office of Management and Budget (OMB) regulations at 5 CFR part 1320, which implement provisions of the Paperwork Reduction Act of 1995 (Pub. L. 104–13), require that interested members of the public and affected agencies have an opportunity to comment on information collection and recordkeeping activities (see 5 CFR 1320.8(d)). OSM has submitted a request to OMB to renew its approval of the collection of information contained in 30 CFR part 700, General. OSM is requesting a 3-year term of approval for this information collection activity.

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid OMB control number. The OMB control number for this collection of information is listed in 30 CFR part 700, which is 1029–0094.

As required under 5 CFR 1320.8(d), a **Federal Register** notice soliciting comments on these collections of information was published on June 20, 1997 (62 FR 33678). No comments were received. This notice provides the public with an additional 30 days in which to comment on the following information collection activity:

Title: General, 30 CFR part 700.

OMB Control Number: 1029–0094.

Summary: This Part establishes procedures and requirements for terminating jurisdiction of surface coal mining and reclamation operations, petitions for rulemaking, and citizen suits filed under the Surface Mining Control and Reclamation Act of 1977.

Bureaur Form Number: None.

Frequency of Collection: Once.

Description of Respondents: State and tribal regulatory authorities, private citizens and citizen groups, and surface coal mining companies.

Total Annual Responses: 10.

Total Annual Burden Hours: 8.

Send comments on the need for the collections of information for the performance of the functions of the agency; the accuracy of the agency's burden estimates; ways to enhance the quality, utility and clarity of the information collections; and ways to minimize the information collection burdens on respondents, such as use of automated means of collections of the information, to the following addresses. Please refer to the appropriate OMB control number in all correspondence.

ADDRESSES: Office of Information and Regulatory Affairs, Office of Management and Budget, Attention: Department of the Interior Desk Officer, 725 17th Street, NW., Washington, DC 20503. Also, please send a copy of your comments to John A. Trelease, Office of

Surface Mining Reclamation and Enforcement, 1951 Constitution Ave., NW., Room 210—SIB, Washington, DC 20240, or electronically to jtreleas@osmre.gov.

Dated: September 17, 1997.

Richard G. Bryson,

Chief, Division of Regulatory Support.

[FR Doc. 97–25358 Filed 9–23–97; 8:45 am]

BILLING CODE 4310–05–M

INTERNATIONAL TRADE COMMISSION

[Investigation No. 337-TA–382]

Certain Flash Memory Circuits and Products Containing Same; Notice of Rescission of Limited Exclusion Order and Cease and Desist Order

AGENCY: U.S. International Trade Commission.

ACTION: Notice.

SUMMARY: Notice is hereby given that the U.S. International Trade Commission has rescinded the limited exclusion order and the cease and desist order previously issued in the above-captioned investigation.

FOR FURTHER INFORMATION CONTACT: Carl P. Bretscher, Esq., Office of the General Counsel, U.S. International Trade Commission, 500 E Street, S.W., Washington, D.C. 20436, telephone (202) 205–3107.

SUPPLEMENTARY INFORMATION: The authority for the Commission's action is contained in section 337 of the Tariff Act of 1930, as amended (19 U.S.C. § 1337), and in section 210.76 of the Commission's Rules of Practice and Procedure (19 CFR § 210.76).

On June 2, 1997, the Commission issued a limited exclusion order and a cease and desist order in the investigation based upon a finding that respondents Samsung Electric Company, Ltd. and Samsung Semiconductor, Inc. (collectively, ''Samsung'') had violated section 337 of the Tariff Act of 1930, as amended (19 U.S.C. § 1337), by importing, selling for importation, and/or selling after importation certain flash memory circuits that infringed claims 1, 2, or 4 of complainant SanDisk Corporation's (''SanDisk'') U.S. Letters Patent 5,418,752 and/or claim 27 of complainant's U.S. Letters Patent 5,172,338.

On August 22, 1997, Samsung and SanDisk filed a joint petition to rescind the limited exclusion order and the cease and desist order on the basis of a settlement agreement they had reached. Samsung and SanDisk asserted that their settlement agreement constituted ''changed conditions of fact or law'' sufficient to justify recision of the orders under Commission rule 210.76(a), 19 C.F.R. § 210.76(a).

Having reviewed the parties' submissions, the Commission determined that the petition and settlement agreement satisfy the requirements of rule 210.76(a). The Commission therefore issued an order rescinding the cease and desist order and the limited exclusion order previously issued in the investigation.

Copies of the Commission's order and all other nonconfidential documents filed in connection with this investigation are or will be available for inspection during official business hours (8:45 a.m. to 5:15 p.m.) in the Office of the Secretary, U.S. International Trade Commission, 500 E Street, S.W., Washington, D.C. 20436, telephone (202) 205–2000. Hearing impaired persons are advised that information on this matter can be obtained by contacting the Commission's TDD terminal at (202) 205–1810.

Issued: September 18, 1997.

By order of the Commission.

Donna R. Koehnke,

Secretary.

[FR Doc. 97–25357 Filed 9–23–97; 8:45 am]

BILLING CODE 7020–02–P

INTERNATIONAL TRADE COMMISSION

[Investigation No. 701–TA–373 and Nos. 731–TA–769 Through 775 (Preliminary)]

Stainless Steel Wire Rod From Germany, Italy, Japan, Korea, Spain, Sweden, and Taiwan

Determinations

On the basis of the record [1] developed in the subject investigations, the United States International Trade Commission determines, pursuant to section 703(a) of the Tariff Act of 1930 (19 U.S.C. § 1671b(a)), that there is a reasonable indication that an industry in the United States is materially injured or threatened with material injury by reason of imports from Italy of stainless steel wire rod,[2] provided for in subheading 7221.00.00 of the Harmonized Tariff Schedule of the United States, that are alleged to be subsidized by the Government of Italy.

Further, the Commission determines, pursuant to section 733(a) of the Tariff Act of 1930 (19 U.S.C. § 1673b(a)), that there is a reasonable indication that an industry in the United States is materially injured or threatened with material injury by reason of imports from Germany, Italy, Japan, Korea, Spain, Sweden, and Taiwan of stainless steel wire rod that are alleged to be sold in the United States at less than fair value (LTFV).

Commencement of Final Phase Investigations

Pursuant to section 207.18 of the Commission's rules, as amended in 61 FR 37818 (July 22, 1996), the Commission also gives notice of the commencement of the final phase of its investigations. The Commission will issue a final phase notice of scheduling which will be published in the **Federal Register** as provided in section 207.21 of the Commission's rules upon notice from the Department of Commerce (Commerce) of affirmative preliminary determinations in the investigations under sections 703(b) or 733(b) of the Act, as appropriate, or, if the preliminary determinations are negative, upon notice of affirmative final determinations in those investigations under sections 705(a) or 735(b) of the Act, as appropriate. Parties that filed entries of appearance in the preliminary phase of the investigations need not enter a separate appearance for the final phase of the investigations. Industrial users, and, if the merchandise under investigation is sold at the retail level, representative consumer organizations have the right to appear as parties in Commission antidumping and countervailing duty investigations. The Secretary will prepare a public service list containing the names and addresses of all persons, or their representatives, who are parties to the investigations.

[1] The record is defined in sec. 207.2(f) of the Commission's Rules of Practice and Procedure (19 CFR § 207.2(f)).

[2] For purposes of these investigations, stainless steel wire rod is defined as articles of stainless steel that are hot-rolled or hot-rolled annealed and/or pickled and/or descaled rounds, squares, octagons, hexagons or other shapes, in coils, that may also be coated with a lubricant containing copper, lime, or oxalate. Stainless steel wire rod is made of alloy steel containing, by weight, 1.2 percent or less of carbon and 10.5 percent or more of chromium, with or without other elements. Stainless steel wire rod is manufactured only by hot-rolling or hot-rolling, annealing, and/or pickling and/or descaling, is normally sold in coiled form, and is of solid cross section. Most stainless steel wire rod sold in the United States is round in cross-sectional shape, annealed and pickled, and later cold-finished into stainless steel wire or small-diameter bar, with the most common size of stainless steel wire rod being 5.5 millimeters (0.217 inches) in diameter. Stainless steel wire rod grades SF20T and K–M35FL are excluded from the scope of these investigations.

Background

On July 30, 1997, a petition was filed with the Commission and the Department of Commerce by counsel on behalf of Al Tech Specialty Steel Corp., Dunkirk, NY; Carpenter Technology Corp., Reading, PA; Republic Engineered Steels, Massilon, OH; Talley Metals Technology, Inc., Hartsville, SC; and the United Steelworkers of America, AFL–CIO/CLC, alleging that an industry in the United States is materially injured and threatened with material injury by reason of subsidized imports of stainless steel wire rod from Italy, and by reason of LTFV imports of such merchandise from Germany, Italy, Japan, Korea, Spain, Sweden, and Taiwan. Accordingly, effective July 30, 1997, the Commission instituted preliminary countervailing duty investigation No. 701–TA–373 (Preliminary) and preliminary antidumping investigations Nos. 731–TA–769 through 775 (Preliminary).

Notice of the institution of the Commission's investigations and of a public conference to be held in connection therewith was given by posting copies of the notice in the Office of the Secretary, U.S. International Trade Commission, Washington, DC, and by publishing the notice in the **Federal Register** of August 6, 1997 (62 FR 42263). The conference was held in Washington, DC, on August 21, 1997, and all persons who requested the opportunity were permitted to appear in person or by counsel.

The Commission transmitted its determinations in these investigations to the Secretary of Commerce on September 15, 1997. The views of the Commission are contained in USITC Publication 3060 (September 1997), entitled ''Stainless Steel Wire Rod from Germany, Italy, Japan, Korea, Spain, Sweden, and Taiwan: Investigation No. 701–TA–373 and Nos. 731–TA–769 through 775 (Preliminary).''

Issued: September 19, 1997.

By order of the Commission.

Donna R. Koehnke,

Secretary.

[FR Doc. 97–25355 Filed 9–23–97; 8:45 am]

BILLING CODE 7020–02–P

DEPARTMENT OF LABOR

Office of the Secretary

Advisory Council on Employee Welfare and Pension Benefit Plans; Extending the Time for Receipt of Nominations for Vacancies Until October 15, 1997

Section 512 of the Employee Retirement Income Security Act of 1974 (ERISA), 88 Stat. 895, 29 U.S.C. 1142, provides for the establishment of an ''Advisory Council on Employee Welfare and Pension Benefit Plans'' (the Council), which is to consist of 15 members to be appointed by the Secretary of Labor (the Secretary) as follows: Three representatives of employee organizations (at least one of whom shall be representative of an organization whose members are participants in a multiemployer plan); three representatives of employers (at least one of whom shall be representative of employers maintaining or contributing to multiemployer plans); one representative each from the fields of insurance, corporate trust, actuarial counseling, investment counseling, investment management and accounting; and three representatives from the general public (one of whom shall be a person representing those receiving benefits from a pension plan). No more than eight members of the Council shall be members of the same political party.

Members shall be persons qualified to appraise the programs instituted under ERISA. Appointments are for terms of three years. The prescribed duties of the Council are to advise the Secretary with respect to the carrying out of his or her functions under ERISA, and to submit to Secretary with respect to the carrying out of his or her functions under ERISA, and to submit to the Secretary, or his or her designee, recommendations with respect thereto. The Council will meet at least four times each year, and recommendations of the Council to the Secretary will be included in the Secretary's annual report to the Congress on ERISA.

The terms of five members of the Council expire Friday, November 14, 1997. The groups or fields represented are as follows: employee organizations (multiemployer plans), investment counseling, actuarial counseling, employers and the general public (pensioners). In addition, this year nominations also are being sought for individuals interested in an appointment to fill one year of a unexpired three-year term of a Council member who died while serving on the Council. That unexpired term calls for naming an employee organization (multiemployer) representative.

Accordingly, notice is hereby given that any person or organization desiring to recommend one or more individuals for appointment to the ERISA Advisory Council on Employee Welfare and Pension Benefit Plans to represent any of the groups or fields specified in the preceding paragraph, may submit recommendations to Sharon Morrissey, Executive Secretary, ERISA Advisory Council, Frances Perkins Building, U.S. Department of Labor, 200 Constitution Avenue, NW., suite N–5677, Washington, DC 20210. This notice is being issued to extend the period in which recommendations can be delivered or mailed. The new date for receipt of recommendations is on or before October 15, 1997. Nominations for a particular category of membership should come from organizations or individuals within that category. A summary of the candidate's qualifications should be included with the nomination.

Signed at Washington, DC, this 19th day of September, 1997.

Olena Berg,

Assistant Secretary of Labor, Pension and Welfare Benefits Administration.

[FR Doc. 97–25353 Filed 9–23–97; 8:45 am]

BILLING CODE 4510–29–M

DEPARTMENT OF LABOR

Employment Standards Administration

Wage and Hour Division; Minimum Wages for Federal and Federally Assisted Construction; General Wage Determination Decisions

General wage determination decisions of the Secretary of Labor are issued in accordance with applicable law and are based on the information obtained by the Department of Labor from its study of local wage conditions and data made available from other sources. They specify the basic hourly wage rates and fringe benefits which are determined to be prevailing for the described classes of laborers and mechanics employed on construction projects of a similar character and in the localities specified therein.

The determinations in these decisions of prevailing rates and fringe benefits have been made in accordance with 29 CFR Part 1, by authority of the Secretary of Labor pursuant to the provisions of the Davis-Bacon Act of March 3, 1931, as amended (46 Stat. 1494, as amended, 40 U.S.C. 276a) and of other Federal statutes referred to in 29 CFR part 1, Appendix, as well as such additional

statutes as may from time to time be enacted containing provisions for the payment of wages determined to be prevailing by the Secretary of Labor in accordance with the Davis-Bacon Act. The prevailing rates and fringe benefits determined in these decisions shall, in accordance with the provisions of the foregoing statutes, constitute the minimum wages payable on Federal and federally assisted construction projects to laborers and mechanics of the specified classes engaged on contract work of the character and in the localities described therein.

Good cause is hereby found for not utilizing notice and public comment procedure thereon prior to the issuance of these determinations as prescribed in 5 U.S.C. 553 and not providing for delay in the effective date as prescribed in that section, because the necessity to issue current construction industry wage determinations frequently and in large volume causes procedures to be impractical and contrary to the public interest.

General wage determination decisions, and modifications and supersedes decisions thereto, contain no expiration dates and are effective from their date of notice in the **Federal Register,** or on the date written notice is received by the agency, whichever is earlier. These decisions are to be used in accordance with the provisions of 29 CFR parts 1 and 5. Accordingly, the applicable decision, together with any modifications issued, must be made part of every contract for performance of the described work without the geographic area indicated as required by an applicable Federal prevailing wage law and 29 CFR part 5. The wage rates and fringe benefits, notice of which is published herein, and which are contained in the Government Printing Office (GPO) document entitled ''General Wage Determinations Issued Under The Davis-Bacon And Related Acts,'' shall be the minimum paid by contractors and subcontractors to laborers and mechanics.

Any person, organization, or governmental agency having an interest in the rates determined as prevailing is encouraged to submit wage rate and fringe benefit information for consideration by the Department. Further information and self-explanatory forms for the purpose of submitting this data may be obtained by writing to the U.S. Department of Labor, Employment Standards Administration, Wage and Hour Division, Division of Wage Determinations, 200 Constitution Avenue, N.W., Room S–3014, Washington, D.C. 20210.

Modifications to General Wage Determination Decisions

The number of decisions listed in the Government Printing Office document entitled ''General Wage Determinations Issued Under the Davis-Bacon and Related Acts'' being modified are listed by Volume and State. Dates of publication in the **Federal Register** are in parentheses following the decisions being modified.

Volume I

Maine
ME970005 (Feb. 14, 1997)
ME970010 (Feb. 14, 1997)
ME970022 (Feb. 14, 1997)
ME970037 (Feb. 14, 1997)
New Jersey
NJ970003 (Feb. 14, 1997)
NJ970005 (Feb. 14, 1997)
New York
NY970002 (Feb. 14, 1997)
NY970003 (Feb. 14, 1997)
NY970004 (Feb. 14, 1997)
NY970005 (Feb. 14, 1997)
NY970007 (Feb. 14, 1997)
NY970010 (Feb. 14, 1997)
NY970011 (Feb. 14, 1997)
NY970013 (Feb. 14, 1997)
NY970016 (Feb. 14, 1997)
NY970019 (Feb. 14, 1997)
NY970022 (Feb. 14, 1997)
NY970032 (Feb. 14, 1997)
NY970033 (Feb. 14, 1997)
NY970034 (Feb. 14, 1997)
NY970036 (Feb. 14, 1997)
NY970038 (Feb. 14, 1997)
NY970039 (Feb. 14, 1997)
NY970041 (Feb. 14, 1997)
NY970042 (Feb. 14, 1997)
NY970043 (Feb. 14, 1997)
NY970044 (Feb. 14, 1997)
NY970045 (Feb. 14, 1997)
NY970046 (Feb. 14, 1997)
NY970047 (Feb. 14, 1997)
NY970048 (Feb. 14, 1997)
NY970049 (Feb. 14, 1997)
NY970051 (Feb. 14, 1997)
NY970072 (Feb. 14, 1997)
Puerto Rico
PR970002 (Feb. 14, 1997)

Volume II

Maryland
MD970015 (Feb. 14, 1997)
Pennsylvania
PA970001 (Feb. 14, 1997)
PA970002 (Feb. 14, 1997)
PA970004 (Feb. 14, 1997)
PA970017 (Feb. 14, 1997)
Virginia
VA970006 (Feb. 14, 1997)
VA970013 (Feb. 14, 1997)

Volume III

Florida
FL970014 (Feb. 14, 1997)
FL970017 (Feb. 14, 1997)
Kentucky
KY970001 (Feb. 14, 1997)
KY970002 (Feb. 14, 1997)
KY970003 (Feb. 14, 1997)
KY970004 (Feb. 14, 1997)
KY970006 (Feb. 14, 1997)
KY970007 (Feb. 14, 1997)
KY970027 (Feb. 14, 1997)
KY970028 (Feb. 14, 1997)
KY970029 (Feb. 14, 1997)
KY970032 (Feb. 14, 1997)
KY970035 (Feb. 14, 1997)

Volume IV

Illinois
IL970007 (Feb. 14, 1997)
Indiana
IN970001 (Feb. 14, 1997)
IN970003 (Feb. 14, 1997)
IN970004 (Feb. 14, 1997)
IN970005 (Feb. 14, 1997)
IN970017 (Feb. 14, 1997)
IN970020 (Feb. 14, 1997)
IN970061 (Feb. 14, 1997)
Michigan
MI970002 (Feb. 14, 1997)
MI970005 (Feb. 14, 1997)
MI970007 (Feb. 14, 1997)
MI970047 (Feb. 14, 1997)
Minnesota
MN970005 (Feb. 14, 1997)
MN970007 (Feb. 14, 1997)
MN970008 (Feb. 14, 1997)
MN970015 (Feb. 14, 1997)
MN970027 (Feb. 14, 1997)
MN970031 (Feb. 14, 1997)
MN970035 (Feb. 14, 1997)
MN970039 (Feb. 14, 1997)
MN970058 (Feb. 14, 1997)
MN970061 (Feb. 14, 1997)
Ohio
OH970001 (Feb. 14, 1997)
OH970002 (Feb. 14, 1997)
OH970003 (Feb. 14, 1997)
OH970007 (Feb. 14, 1997)
OH970012 (Feb. 14, 1997)
OH970014 (Feb. 14, 1997)
OH970018 (Feb. 14, 1997)
OH970024 (Feb. 14, 1997)
OH970028 (Feb. 14, 1997)
OH970029 (Feb. 14, 1997)
OH970032 (Feb. 14, 1997)
OH970034 (Feb. 14, 1997)
OH970035 (Feb. 14, 1997)

Volume V

Iowa
IA970010 (Feb. 14, 1997)
IA970032 (Feb. 14, 1997)
Louisiana
LA970001 (Feb. 14, 1997)
LA970005 (Feb. 14, 1997)
LA970009 (Feb. 14, 1997)
LA970014 (Feb. 14, 1997)
LA970018 (Feb. 14, 1997)
Texas
TX970015 (Feb. 14, 1997)
TX970060 (Feb. 14, 1997)

Volume VI

Oregon
OR970001 (Feb. 14, 1997)
OR970004 (Feb. 14, 1997)
OR970017 (Feb. 14, 1997)

Volume VII

California
CA970001 (Feb. 14, 1997)
CA970002 (Feb. 14, 1997)
CA970004 (Feb. 14, 1997)
CA970027 (Feb. 14, 1997)
CA970028 (Feb. 14, 1997)
CA970029 (Feb. 14, 1997)

CA970030 (Feb. 14, 1997)
CA970031 (Feb. 14, 1997)
CA970032 (Feb. 14, 1997)
CA970033 (Feb. 14, 1997)
CA970034 (Feb. 14, 1997)
CA970035 (Feb. 14, 1997)
CA970036 (Feb. 14, 1997)
CA970037 (Feb. 14, 1997)
CA970038 (Feb. 14, 1997)
CA970039 (Feb. 14, 1997)
CA970040 (Feb. 14, 1997)
CA970041 (Feb. 14, 1997)
CA970042 (Feb. 14, 1997)
CA970043 (Feb. 14, 1997)
CA970044 (Feb. 14, 1997)
CA970045 (Feb. 14, 1997)
CA970046 (Feb. 14, 1997)
CA970047 (Feb. 14, 1997)
CA970048 (Feb. 14, 1997)
CA970057 (Feb. 14, 1997)
CA970060 (Feb. 14, 1997)
CA970063 (Feb. 14, 1997)
CA970065 (Feb. 14, 1997)
CA970098 (Feb. 14, 1997)

General Wage Determination Publication

General wage determinations issued under the Davis-Bacon and related Acts, including those noted above, may be found in the Government Printing Office (GPO) document entitled ''General Wage Determinations Issued Under The Davis-Bacon and Related Acts''. This publication is available at each of the 50 Regional Government Depository Libraries and many of the 1,400 Government Depository Libraries across the country.

The general wage determinations issued under the Davis-Bacon and related Acts are available electronically by subscription to the FedWorld Bulletin Board System of the National Technical Information Service (NTIS) of the U.S. Department of Commerce at (703) 487–4630.

Hard-copy subscriptions may be purchased from: Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402 (202) 512–1800.

When ordering hard-copy subscription(s), be sure to specify the State(s) of interest, since subscriptions may be ordered for any or all of the seven separate volumes, arranged by State. Subscriptions include an annual edition (issued in January or February) which includes all current general wage determinations for the State covered by each volume. Throughout the remainder of the year, regular weekly updates are distributed to subscribers.

Signed at Washington, D.C. this 19th day of September 1997.

Carl Poleskey,

Chief, Branch of Construction Wage Determinations.

[FR Doc. 97–25314 Filed 9–23–97; 8:45 am]

BILLING CODE 4510–27–M

FEDERAL MINE SAFETY AND HEALTH REVIEW COMMISSION

Sunshine Act Meeting

September 18, 1997.

TIME AND DATE: 10:00 a.m., Thursday, September 25, 1997.

PLACE: Room 6005, 6th Floor, 1730 K Street, N.W., Washington, D.C.

STATUS: Open.

MATTERS TO BE CONSIDERED: The Commission will consider and act upon the following:

1. Whether to propose revisions to Commission Procedural Rules 5, 9, 10, 45(f), 70, and 75 (supersedes earlier announcement).

Any person attending oral argument or an open meeting who requires special accessibility features and/or auxiliary aids, such as sign language interpreters, must inform the Commission in advance of those needs. Subject to 29 CFR § 2706.150(a)(3) and § 2706.160(d).

CONTACT PERSON FOR MORE INFO: Jean Ellen (202) 653–5629/(202) 708–9300 for TDD Relay/1–800–877–8339 for toll free.

Sandra G. Farrow,

Acting Chief Docket Clerk.

[FR Doc. 97–25402 Filed 9–19–97; 4:55 pm]

BILLING CODE 6735–01–M

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

[Notice (97–138)]

Government-Owned Inventions, Available for Licensing

AGENCY: National Aeronautics and Space Administration.

ACTION: Notice of Availability of Inventions for Licensing.

SUMMARY: The inventions listed below are assigned to the National Aeronautics and Space Administration, have been filed in the United States Patent and Trademark Office, and are available for licensing.

DATES: September 24, 1997.

FOR FURTHER INFORMATION CONTACT: Yvonne Kellogg, Dryden Flight Research Center, Mail Stop D–4839A, P.O. Box 273, Edwards, CA 93523–0273, telephone (805) 258–3720.

NASA Case No. DRC–096–007: Emergency Control Aircraft System Using Thrust Modulation;

NASA Case No. DRC–097–021: Emergency Multiengine Aircraft System for Lateral Control Using Differential Thrust Control of Wing Engines.

Dated: September 17, 1997.

Edward A. Frankle,

General Counsel.

[FR Doc. 97–25345 Filed 9–23–97; 8:45 am]

BILLING CODE 7510–01–M

NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

[Notice (97–139)]

Government-Owned Inventions, Available for licensing

AGENCY: National Aeronautics and Space Administration.

ACTION: Notice of Availability of Inventions for Licensing.

SUMMARY: The inventions listed below are assigned to the National Aeronautics and Space Administration, have been filed in the Untied States Patent and Trademark Office, and are available for licensing.

DATE: September 24, 1997.

FOR FURTHER INFORMATION CONTACT: Beth Vrioni, Patent Counsel, Kennedy Space Center, Mail Stop DE–TPO, at (407) 867–6225.

NASA Case No KSC–11866: Non-Intrusive Impedence based Cable Tester;

NASA Case No. KSC–11959: Use of Ultrasound to Improve the Effectiveness of a Permeable Treatment Wall;

NASA Case No. KSC–11809: Detector for Particle Surface Contamination.

Dated: September 17, 1997.

Edward A. Frankle,

General Counsel.

[FR Doc. 97–25346 Filed 9–23–97; 8:45 am]

BILLING CODE 7510–01–M

NATIONAL TRANSPORTATION SAFETY BOARD

Sunshine Act Meeting

TIME: 10:00 a.m., Tuesday, September 30, 1997.

PLACE: The Board Room, 5th Floor, 490 L'Enfant Plaza, S.W., Washington, D.C. 20594.

STATUS: Open.

MATTERS TO BE DISCUSSED:

6910
Highway Accident Summary Report: Collision With a Pedestrian by a Utility Truck, Cosmopolis, Washington, November 26, 1996.
6913
Highway Accident Summary Report: Truck Loss of Braking Control on Steep Downgrade and Vehicle Collision, Plymouth Meeting, Pennsylvania, April 25, 1996.

NEWS MEDIA CONTACT: Telephone: (202) 314–6100.

FOR MORE INFORMATION CONTACT: Bea Hardesty, (202) 314–6065.

Dated: September 19, 1997.

Bea Hardesty,

Federal Register Liaison Officer.

[FR Doc. 97–25397 Filed 9–19–97; 4:18 pm]

BILLING CODE 7533–01–P

NUCLEAR REGULATORY COMMISSION

[Docket Nos. 50–348 and 50–364]

Southern Nuclear Operating Company, Inc., et al.; Notice of Consideration of Issuance of Amendments to Facility Operating Licenses, Proposed No Significant Hazards Consideration Determination, and Opportunity for a Hearing

The U.S. Nuclear Regulatory Commission (the Commission) is considering issuance of amendments to Facility Operating License Nos. NPF–2 and NPF–8, issued to the Southern Nuclear Operating Company, Inc., et al. (the licensee) for operation of the Joseph M. Farley Nuclear Plant, Units 1 and 2, located in Houston County, Alabama.

The proposed amendments would modify Technical Specification 3/4.4.9, ''Specific Activity,'' and the associated Bases to reduce the limit associated with dose equivalent iodine-131. The steady-state dose equivalent iodine-131 limit will be reduced to 0.15 μCurie/gram. The transient limit for 80 percent to 100 percent will be reduced to 9 μCurie/gram with limits as shown on Technical Specification Figure 3.4–1 for less than 80 percent power.

Before issuance of the proposed license amendments, the Commission will have made findings required by the Atomic Energy Act of 1954, as amended (the Act) and the Commission's regulations.

The Commission has made a proposed determination that the amendment request involves no significant hazards consideration. Under the Commission's regulations in 10 CFR 50.92, this means that operation of the facility in accordance with the proposed amendment would not: (1) Involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety. As required by 10 CFR 50.91(a), the licensee has provided its analysis of the issue of no significant hazards consideration, which is presented below:

1. Operation of Farley Units 1 and 2 in accordance with the proposed license amendment does not involve a significant increase in the probability or consequences of an accident previously evaluated.

The reduction in the dose equivalent iodine limits, both steady-state and transient, will not increase the probability of any accident evaluated since no physical changes to the plant are being made. The consequences of any accident previously evaluated will not be increased since the specific activity limit of the primary coolant is being decreased.

2. The proposed license amendment does not create the possibility of a new or different kind of accident from any accident previously evaluated.

The reduction in the dose equivalent iodine limits, both steady-state and transient, will not create the possibility of a new or different kind of accident from any accident previously evaluated since no physical changes to the plant are being made. The accidents of concern continue to be those that have previously been analyzed.

3. The proposed license amendment does not involve a significant reduction in a margin of safety.

The calculated potential radiological consequences from the main steam line break accident remain within the regulatory exposure guidelines and have not changed. Reduction of the dose equivalent iodine limit to increase allowable steam line break primary-to-secondary steam generator leakage is a compensating offsite dose effect. Consequently, there is no reduction in any margin of safety.

The NRC staff has reviewed the licensee's analysis and, based on this review, it appears that the three standards of 10 CFR 50.92(c) are satisfied. Therefore, the NRC staff proposes to determine that the amendment request involves no significant hazards consideration.

The Commission is seeking public comments on this proposed determination. Any comments received within 30 days after the date of publication of this notice will be considered in making any final determination.

Normally, the Commission will not issue the amendment until the expiration of the 30-day notice period. However, should circumstances change during the notice period such that failure to act in a timely way would result, for example, in derating or shutdown of the facility, the Commission may issue the license amendment before the expiration of the 30-day notice period, provided that its final determination is that the amendment involves no significant hazards consideration. The final determination will consider all public and State comments received. Should the Commission take this action, it will publish in the **Federal Register** a notice of issuance and provide for opportunity for a hearing after issuance. The Commission expects that the need to take this action will occur very infrequently.

Written comments may be submitted by mail to the Chief, Rules and Directives Branch, Division of Freedom of Information and Publications Services, Office of Administration, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001, and should cite the publication date and page number of this **Federal Register** notice. Written comments may also be delivered to Room 6D22, Two White Flint North, 11545 Rockville Pike, Rockville, Maryland, from 7:30 a.m. to 4:15 p.m. Federal workdays. Copies of written comments received may be examined at the NRC Public Document Room, the Gelman Building, 2120 L Street, NW., Washington, DC.

The filing of requests for hearing and petitions for leave to intervene is discussed below.

By October 24, 1997, the licensee may file a request for a hearing with respect to issuance of the amendment to the subject facility operating license and any person whose interest may be affected by this proceeding and who wishes to participate as a party in the proceeding must file a written request for a hearing and a petition for leave to intervene. Requests for a hearing and a petition for leave to intervene shall be filed in accordance with the Commission's ''Rules of Practice for Domestic Licensing Proceedings'' in 10 CFR part 2. Interested persons should consult a current copy of 10 CFR 2.714 which is available at the Commission's Public Document Room, the Gelman Building, 2120 L Street, NW., Washington, DC, and at the local public document room located at the Houston-Love Memorial Library, 212 W. Burdeshaw Street, Post Office Box 1369, Dothan, Alabama. If a request for a hearing or petition for leave to intervene is filed by the above date, the Commission or an Atomic Safety and Licensing Board, designated by the Commission or by the Chairman of the Atomic Safety and Licensing Board Panel, will rule on the request and/or petition; and the Secretary or the designated Atomic Safety and Licensing Board will issue a notice of hearing or an appropriate order.

As required by 10 CFR 2.714, a petition for leave to intervene shall set forth with particularity the interest of the petitioner in the proceeding, and how that interest may be affected by the results of the proceeding. The petition

should specifically explain the reasons why intervention should be permitted with particular reference to the following factors: (1) The nature of the petitioner's right under the Act to be made party to the proceeding; (2) the nature and extent of the petitioner's property, financial, or other interest in the proceeding; and (3) the possible effect of any order which may be entered in the proceeding on the petitioner's interest. The petition should also identify the specific aspect(s) of the subject matter of the proceeding as to which petitioner wishes to intervene. Any person who has filed a petition for leave to intervene or who has been admitted as a party may amend the petition without requesting leave of the Board up to 15 days prior to the first prehearing conference scheduled in the proceeding, but such an amended petition must satisfy the specificity requirements described above.

Not later than 15 days prior to the first prehearing conference scheduled in the proceeding, a petitioner shall file a supplement to the petition to intervene which must include a list of the contentions which are sought to be litigated in the matter. Each contention must consist of a specific statement of the issue of law or fact to be raised or controverted. In addition, the petitioner shall provide a brief explanation of the bases of the contention and a concise statement of the alleged facts or expert opinion which support the contention and on which the petitioner intends to rely in proving the contention at the hearing. The petitioner must also provide references to those specific sources and documents of which the petitioner is aware and on which the petitioner intends to rely to establish those facts or expert opinion. Petitioner must provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Contentions shall be limited to matters within the scope of the amendment under consideration. The contention must be one which, if proven, would entitle the petitioner to relief. A petitioner who fails to file such a supplement which satisfies these requirements with respect to at least one contention will not be permitted to participate as a party.

Those permitted to intervene become parties to the proceeding, subject to any limitations in the order granting leave to intervene, and have the opportunity to participate fully in the conduct of the hearing, including the opportunity to present evidence and cross-examine witnesses.

If a hearing is requested, the Commission will make a final determination on the issue of no significant hazards consideration. The final determination will serve to decide when the hearing is held.

If the final determination is that the amendment request involves no significant hazards consideration, the Commission may issue the amendment and make it immediately effective, notwithstanding the request for a hearing. Any hearing held would take place after issuance of the amendment.

If the final determination is that the amendment request involves a significant hazards consideration, any hearing held would take place before the issuance of any amendment.

A request for a hearing or a petition for leave to intervene must be filed with the Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001, Attention: Rulemakings and Adjudications Staff, or may be delivered to the Commission's Public Document Room, the Gelman Building, 2120 L Street, NW., Washington, DC, by the above date. A copy of the petition should also be sent to the Office of the General Counsel, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001, and to M. Stanford Blanton, Esq., Balch and Bingham, Post Office Box 306, 1710 Sixth Avenue North, Birmingham, Alabama, attorney for the licensee.

Nontimely filings of petitions for leave to intervene, amended petitions, supplemental petitions and/or requests for hearing will not be entertained absent a determination by the Commission, the presiding officer or the presiding Atomic Safety and Licensing Board that the petition and/or request should be granted based upon a balancing of the factors specified in 10 CFR 2.714(a)(1) (i)–(v) and 2.714(d).

For further details with respect to this action, see the application for amendments dated September 17, 1997, which is available for public inspection at the Commission's Public Document Room, the Gelman Building, 2120 L Street, NW., Washington, DC, and at the local public document room located at the Houston-Love Memorial Library, 212 W. Burdeshaw Street, Post Office Box 1369, Dothan, Alabama.

Dated at Rockville, Maryland, this 19th day of September 1997.

For the Nuclear Regulatory Commission.

Jacob I. Zimmerman,

Project Manager, Project Directorate II–2, Division of Reactor Projects—I/II, Office of Nuclear Reactor Regulation.

[FR Doc. 97–25316 Filed 9–23–97; 8:45 am]

BILLING CODE 7590–01–P

NUCLEAR REGULATORY COMMISSION

[Docket No. 70–3085]

Draft Environmental Impact Statement on Proposed Decommissioning of the Babcock & Wilcox Shallow Land Disposal Area in Parks Township, PA

AGENCY: Nuclear Regulatory Commission.

ACTION: Draft Environmental Impact Statement—Decommissioning of the Babcock & Wilcox Shallow Land Disposal Area in Parks Township, Pennsylvania; withdrawal of notice of availability.

SUMMARY: The U.S. Nuclear Regulatory Commission is withdrawing a Draft Environmental Impact Statement (DEIS) (NUREG–1613) regarding the proposed decommissioning of the Babcock & Wilcox (B&W) Shallow Land Disposal Area (SLDA) in Parks Township, Pennsylvania. A notice of availability for the DEIS was published on September 4, 1997 (62 FR 46780). The NRC is taking this withdrawal action in order to develop additional information regarding the alternatives described in the DEIS.

EFFECTIVE DATE: September 24, 1997.

FOR FURTHER INFORMATION CONTACT: Dr. Phyllis Sobel, Low-Level Waste and Decommissioning Projects Branch, Mail Stop T7F–27, Division of Waste Management, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555–0001. Telephone 301–415–6714.

SUPPLEMENTARY INFORMATION: On September 4, 1997 (62 FR 46780), the NRC published a notice of availability for a Draft Environmental Impact Statement (DEIS) for the proposed decommissioning of the Babcock & Wilcox (B&W) Shallow Land Disposal Area (SLDA) in Parks Township, Pennsylvania. The DEIS described and evaluated the potential environmental impacts of B&W's proposed approach to decommission the radiologically contaminated waste which would involve the stabilization of waste in place at the site. The DEIS also contained information regarding alternatives to B&W's proposal, including an NRC staff recommended alternative that would involve a modified stabilization in place option.

The NRC is withdrawing the DEIS in order to develop additional information regarding the alternatives presented. The NRC will provide further consideration to the merits of the various alternatives in light of any

additional information that is developed. As a result of this withdrawal action, the NRC is postponing the public meeting announced in the notice published on September 4. In addition, the opportunity for a hearing that was published as part of the notice is withdrawn pending further NRC action on the matter.

Dated at Rockville, Md., this 18th day of September 1997.

For the Nuclear Regulatory Commission,

John W.N. Hickey,

Chief, Low-Level Waste and Decommissioning Projects Branch, Division of Waste Management, Office of Nuclear Material Safety and Safeguards.

[FR Doc. 97–25317 Filed 9–23–97; 8:45 am]

BILLING CODE 7590–01–P

NUCLEAR REGULATORY COMMISSION

Sunshine Act Meeting

AGENCY HOLDING THE MEETING: Nuclear Regulatory Commission.

DATE: Weeks of September 22, 29, October 6, and 13, 1997.

PLACE: Commissioners' Conference Room, 11555 Rockville Pike, Rockville, Maryland.

STATUS: Public and Closed.

MATTERS TO BE CONSIDERED:

Week of September 22

There are no meetings scheduled for the week of September 22.

Week of September 29—Tentative

There are no meetings scheduled for the week of September 29.

Week of October 6—Tentative

There are no meetings scheduled for the week of October 6.

Week of October 13—Tentative

Tuesday, October 14

10:00 a.m.
Briefing on EEO Program (Public Meeting) (Contact: Irene Little, 301–415–7380)

1:00 p.m.
Briefing on Severe Accident Master Integration Plan (Public Meeting)

Wednesday, October 15

10:00 a.m.
Briefing on PRA Implementation Plan (Public Meeting) (Contact: Gary Holahan, 301–415–2884)

11:30 a.m.
Affirmation Session (Public Meeting) (if needed)

*The schedule for commission meetings is subject to change on short notice. To verify the status of meetings call (recording) (301) 415–1292. Contact person for more information: Bill Hill (301) 415–1661.

* * * * *

The NRC Commission Schedule can be found on the Internet at: http://www.nrc.gov/SECY/smj/schedule.htm.

* * * * *

This notice is distributed by mail to several hundred subscribers; if you no longer wish to receive it, or would like to be added to it, please contact the Office of the Secretary, Attn: Operations Branch, Washington, D.C. 20555 (301–415–1661).

In addition, distribution of this meeting notice over the internet system is available. If you are interested in receiving this Commission meeting schedule electronically, please send an electronic message to wmh@nrc.gov or dkw@nrc.gov.

* * * * *

Dated: September 19, 1997.

William M. Hill, Jr.,

SECY Tracking Officer, Office of the Secretary.

[FR Doc. 97–25444 Filed 9–22–97; 8:45 am]

BILLING CODE 7590–01–M

NUCLEAR REGULATORY COMMISSION

Biweekly Notice

Applications and Amendments to Facility Operating Licenses Involving No Significant Hazards Considerations

I. Background

Pursuant to Public Law 97-415, the U.S. Nuclear Regulatory Commission (the Commission or NRC staff) is publishing this regular biweekly notice. Public Law 97-415 revised section 189 of the Atomic Energy Act of 1954, as amended (the Act), to require the Commission to publish notice of any amendments issued, or proposed to be issued, under a new provision of section 189 of the Act. This provision grants the Commission the authority to issue and make immediately effective any amendment to an operating license upon a determination by the Commission that such amendment involves no significant hazards consideration, notwithstanding the pendency before the Commission of a request for a hearing from any person.

This biweekly notice includes all notices of amendments issued, or proposed to be issued from August 29, 1997, through September 12, 1997. The last biweekly notice was published on September 10, 1997 (62 FR 47696).

Notice Of Consideration of Issuance of Amendments To Facility Operating Licenses, Proposed No Significant Hazards Consideration Determination, and Opportunity for a Hearing

The Commission has made a proposed determination that the following amendment requests involve no significant hazards consideration. Under the Commission's regulations in 10 CFR 50.92, this means that operation of the facility in accordance with the proposed amendment would not (1) involve a significant increase in the probability or consequences of an accident previously evaluated; or (2) create the possibility of a new or different kind of accident from any accident previously evaluated; or (3) involve a significant reduction in a margin of safety. The basis for this proposed determination for each amendment request is shown below.

The Commission is seeking public comments on this proposed determination. Any comments received within 30 days after the date of publication of this notice will be considered in making any final determination.

Normally, the Commission will not issue the amendment until the expiration of the 30-day notice period. However, should circumstances change during the notice period such that failure to act in a timely way would result, for example, in derating or shutdown of the facility, the Commission may issue the license amendment before the expiration of the 30-day notice period, provided that its final determination is that the amendment involves no significant hazards consideration. The final determination will consider all public and State comments received before action is taken. Should the Commission take this action, it will publish in the **Federal Register** a notice of issuance and provide for opportunity for a hearing after issuance. The Commission expects that the need to take this action will occur very infrequently.

Written comments may be submitted by mail to the Chief, Rules and Directives Branch, Division of Freedom of Information and Publications Services, Office of Administration, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, and should cite the publication date and page number of this **Federal Register** notice. Written comments may also be delivered to Room 6D22, Two White Flint North, 11545 Rockville Pike, Rockville, Maryland, from 7:30 a.m. to 4:15 p.m. Federal workdays. Copies of written comments received may be

examined at the NRC Public Document Room, the Gelman Building, 2120 L Street, NW., Washington, DC. The filing of requests for a hearing and petitions for leave to intervene is discussed below.

By October 24, 1997, the licensee may file a request for a hearing with respect to issuance of the amendment to the subject facility operating license and any person whose interest may be affected by this proceeding and who wishes to participate as a party in the proceeding must file a written request for a hearing and a petition for leave to intervene. Requests for a hearing and a petition for leave to intervene shall be filed in accordance with the Commission's ''Rules of Practice for Domestic Licensing Proceedings'' in 10 CFR Part 2. Interested persons should consult a current copy of 10 CFR 2.714 which is available at the Commission's Public Document Room, the Gelman Building, 2120 L Street, NW., Washington, DC and at the local public document room for the particular facility involved. If a request for a hearing or petition for leave to intervene is filed by the above date, the Commission or an Atomic Safety and Licensing Board, designated by the Commission or by the Chairman of the Atomic Safety and Licensing Board Panel, will rule on the request and/or petition; and the Secretary or the designated Atomic Safety and Licensing Board will issue a notice of a hearing or an appropriate order.

As required by 10 CFR 2.714, a petition for leave to intervene shall set forth with particularity the interest of the petitioner in the proceeding, and how that interest may be affected by the results of the proceeding. The petition should specifically explain the reasons why intervention should be permitted with particular reference to the following factors: (1) the nature of the petitioner's right under the Act to be made a party to the proceeding; (2) the nature and extent of the petitioner's property, financial, or other interest in the proceeding; and (3) the possible effect of any order which may be entered in the proceeding on the petitioner's interest. The petition should also identify the specific aspect(s) of the subject matter of the proceeding as to which petitioner wishes to intervene. Any person who has filed a petition for leave to intervene or who has been admitted as a party may amend the petition without requesting leave of the Board up to 15 days prior to the first prehearing conference scheduled in the proceeding, but such an amended petition must satisfy the specificity requirements described above.

Not later than 15 days prior to the first prehearing conference scheduled in the proceeding, a petitioner shall file a supplement to the petition to intervene which must include a list of the contentions which are sought to be litigated in the matter. Each contention must consist of a specific statement of the issue of law or fact to be raised or controverted. In addition, the petitioner shall provide a brief explanation of the bases of the contention and a concise statement of the alleged facts or expert opinion which support the contention and on which the petitioner intends to rely in proving the contention at the hearing. The petitioner must also provide references to those specific sources and documents of which the petitioner is aware and on which the petitioner intends to rely to establish those facts or expert opinion. Petitioner must provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Contentions shall be limited to matters within the scope of the amendment under consideration. The contention must be one which, if proven, would entitle the petitioner to relief. A petitioner who fails to file such a supplement which satisfies these requirements with respect to at least one contention will not be permitted to participate as a party.

Those permitted to intervene become parties to the proceeding, subject to any limitations in the order granting leave to intervene, and have the opportunity to participate fully in the conduct of the hearing, including the opportunity to present evidence and cross-examine witnesses.

If a hearing is requested, the Commission will make a final determination on the issue of no significant hazards consideration. The final determination will serve to decide when the hearing is held.

If the final determination is that the amendment request involves no significant hazards consideration, the Commission may issue the amendment and make it immediately effective, notwithstanding the request for a hearing. Any hearing held would take place after issuance of the amendment.

If the final determination is that the amendment request involves a significant hazards consideration, any hearing held would take place before the issuance of any amendment.

A request for a hearing or a petition for leave to intervene must be filed with the Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, Attention: Rulemakings and Adjudications Staff, or may be delivered to the Commission's Public Document Room, the Gelman Building, 2120 L Street, NW., Washington DC, by the above date. A copy of the petition should also be sent to the Office of the General Counsel, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, and to the attorney for the licensee.

Nontimely filings of petitions for leave to intervene, amended petitions, supplemental petitions and/or requests for a hearing will not be entertained absent a determination by the Commission, the presiding officer or the Atomic Safety and Licensing Board that the petition and/or request should be granted based upon a balancing of factors specified in 10 CFR 2.714(a)(1)(i)-(v) and 2.714(d).

For further details with respect to this action, see the application for amendment which is available for public inspection at the Commission's Public Document Room, the Gelman Building, 2120 L Street, NW., Washington, DC, and at the local public document room for the particular facility involved.

Duke Energy Corporation, Docket Nos. 50-269, 50-270, and 50-287, Oconee Nuclear Station, Units 1, 2, and 3, Oconee County, South Carolina

Date of amendment request: July 15, 1997

Description of amendment request: The proposed amendments would: (1) add Technical Specification (TS) 3.5.7, ''Main Steam Line Break Detection and Feedwater Isolation,'' to identify operability requirements and Bases for the main steamline break (MSLB) detection isolation circuitry, the feedwater isolation circuitry, the main feedwater main control valves, and the main feedwater startup control valves; (2) revise TS 3.5.1, ''Operation Safety Instrumentation'' to add a reference to TS 3.5.7; (3) revise Table 3.5.1-1, ''Instruments Operating Conditions,'' to reflect operability requirements for the main steam header pressure and MSLB detection channels, the feedwater isolation channels, and the feedwater isolation channels manual pushbuttons; and (4) revise Table 4.1-1, ''Instrument Surveillance Requirements,'' and Table 4.1-2, ''Minimum Equipment Test Frequency,'' to include surveillance requirements for the subject circuitry and components.

Basis for proposed no significant hazards consideration determination: As required by 10 CFR 50.91(a), the licensee has provided its analysis of the issue of no significant hazards consideration, which is presented below:

A. Involve a significant increase in the probability or consequences of an accident previously evaluated?

NO

This proposed Technical Specification amendment does not create any conditions or events which lead to accidents (events) previously evaluated in the UFSAR [Updated Final Safety Analysis Report], other than a loss of Main Feedwater (FDW). The new MSLB detection and feedwater isolation circuitry addressed by this change is designed so that a credible single failure will not cause a loss of FDW to the steam generator unless [an] MSLB is detected. Single failures are not assumed if entry into a Technical Specification action statement occurs.

During [an] MSLB, the circuitry is intentionally stopping and isolating FDW. Operators are currently instructed to isolate FDW on indication of [an] MSLB. The new circuitry will automatically stop FDW to eliminate the need for this operator action. Thus the probability of the stopping (loss) of FDW is not increased. The NRC has also stated that the stopping of FDW to mitigate [an] MSLB is an acceptable response to address the concerns of Inspection and Enforcement Bulletin 80-04.

The Emergency Feedwater (EFW) System is an accident mitigation system. The MSLB modification and associated Technical Specification to keep the turbine driven emergency feedwater pump (TDEFW) pump from starting following [an] MSLB will not initiate any accidents.

The potential for containment overpressurization currently exists without the installed modification and associated Technical Specification. The new MSLB detection and feedwater isolation circuitry will assist in reducing the potential for the overpressurization of containment. The EFW circuitry is designed so that the TDEFWP will still auto start for any event other than [an] MSLB. The TDEFWP can still be manually started during [an] MSLB or FDW line break accident as needed. This action is similar to other manual actions to align EFW for the MSLB scenarios that are already described in the ONS [Oconee Nuclear Station] UFSAR. This new circuitry and associated Technical Specification creates no new credible single failures that could prevent the TDEFWP from auto starting (except for the MSLB). The motor driven EFW pumps and EFW flow control valves are not adversely affected by this change and will provide EFW flow for scenarios other than Station Blackout. Both FDW and EFW will still provide their design functions of supplying feedwater to the steam generators, as evaluated in the UFSAR. The ability to shut down following a 10CFR50 Appendix R fire is not adversely affected. This Technical Specification change does not adversely affect containment integrity and radiological release pathways.

B. Create the possibility of a new or different kind of accident from the accident previously evaluated?

NO

No accidents different than already evaluated in the UFSAR are postulated. The FDW System will still perform its design function of supplying feedwater to the steam generators as evaluated in the UFSAR. The EFW System will still provide its function of supplying feedwater to the steam generators, as evaluated in the UFSAR for events resulting in the loss of the FDW System.

C. Involve a significant reduction in a margin of safety?

NO

The design pressure of containment is specified to be 59 psig in the bases to several Technical Specifications. With the potential for unrestricted FDW and EFW flow during [an] MSLB inside containment, the design pressure of the containment could be exceeded. The proposed Technical Specifications address equipment which will function to isolate FDW in the unlikely event of [an] MSLB accident. Therefore, the proposed Technical Specifications do not increase the potential for the containment to be pressurized or increase the expected pressure of containment following [an] MSLB. No plant safety limits, set points, or design parameters are adversely affected. The fuel, fuel cladding, and Reactor Coolant System are not impacted.

Duke [Duke Energy Corporation] has concluded based on the above that there are no significant hazards considerations involved in this amendment request.

The NRC staff has reviewed the licensee's analysis and, based on this review, it appears that the three standards of 10 CFR 50.92(c) are satisfied. Therefore, the NRC staff proposes to determine that the amendment request involves no significant hazards consideration.

Local Public Document Room location: Oconee County Library, 501 West South Broad Street, Walhalla, South Carolina 29691

Attorney for licensee: J. Michael McGarry, III, Winston and Strawn, 1200 17th Street, NW., Washington, DC 20036

NRC Project Director: Herbert N. Berkow

Duke Power Company, Docket Nos. 50-269, 270 and 50-287, Oconee Nuclear Station, Units 1, 2 and 3, Oconee County, South Carolina

Date of amendment request: August 28, 1997 (TSC 96-09)

Description of amendment request: The proposed changes would add new limiting conditions for operation and new surveillance requirements for the Emergency Condenser Circulating Water System, the Essential Siphon Vacuum System, and the Siphon Seal Water System to reflect design changes and modifications to these systems.

Basis for proposed no significant hazards consideration determination: As required by 10 CFR 50.91(a), the licensee has provided its analysis of the issue of no significant hazards consideration, which is presented below:

[1. Will the change] involve a significant increase in the probability or consequences of an accident previously evaluated?

NO.

This Technical Specification change does not create any conditions or events which lead to accidents previously evaluated in the UFSAR [Updated Final Safety Analysis Report]. The new ECCW [Emergency Condenser Circulating Water] System Technical Specification 3.19, along with the new ECCW Surveillance requirements specified in Technical Specification Table 4.1-2, are conservative in nature. No existing Technical Specification requirements are being deleted with this revision. Surveillance and operability requirements are being added for the upgraded ECCW System.

The ECCW System is only required following the occurrence of loss of offsite power (LOOP) events. The most limiting of these LOOP events is the loss of coolant accident concurrent with the LOOP (LOCA/LOOP). Therefore, the ECCW System is not considered to be an accident initiator. As a result, the proposed new ECCW Technical Specification requirements will not result in any increase in the probability of any design basis accidents or events evaluated in the UFSAR.

The credit for restarting a CCW [Condenser Circulating Water] pump within 1.5 hours following a LOOP, to ensure suction to LPSW [Low Pressure Service Water] is maintained, is being replaced by credit for maintaining the ECCW siphon using the new siphon support systems (ESV [Essential Siphon Vacuum] System and SSW [Siphon Seal Water] System) in conjunction with the upgraded ECCW System. Therefore, obsolete requirements specified in Selected Licensee Commitments (SLCs) 16.9.7 and 16.9.8 will be revised or deleted accordingly. Replacement of the CCW pump restart during a LOOP with the ability to maintain ECCW siphon flow will not create any conditions or events which lead to accidents previously evaluated in the UFSAR.

The modifications to upgrade the ECCW System were performed to improve the reliability of the ECCW System. The proposed new ECCW Technical Specification provides additional surveillance and operability requirements to ensure that the upgraded ECCW System will function reliably during the design basis events which require its operation. Therefore, these proposed new Technical Specification requirements will not increase the consequences of any accidents previously evaluated in the UFSAR.

[2. Will the change] create the possibility of a new or different kind of accident from the accident previously evaluated?

NO.

No accidents different than those already evaluated in the UFSAR are postulated. The upgraded ECCW System will more reliably perform its design function of supplying water to the suction of the Low Pressure Service Water (LPSW) System as evaluated in the UFSAR. The new Technical Specification requirements will increase the reliability of the upgraded ECCW System. In addition, the ECCW System is not an accident initiator since it is used following certain design basis events such as a LOCA/LOOP.

[3. Will the change] involve a significant reduction in a margin of safety?

NO.

The proposed Technical Specifications address equipment which will function in certain design basis events, such as a LOCA/LOOP, to ensure a reliable water supply to the LPSW System. The LPSW System must function to remove decay heat from primary systems and the reactor building during a LOCA/LOOP. The proposed Technical Specifications addressing the upgraded ECCW System will further enhance the reliability of the ECCW System and will result in greater assurance that the LPSW System can perform its safety functions. No plant safety limits, setpoints, or design parameters are adversely affected. The fuel, fuel cladding, and Reactor Coolant System are not impacted. The proposed Technical Specifications provide additional, conservative, operational requirements beyond the current Technical Specifications which address the ECCW System.

Duke [Duke Energy Corporation] has concluded based on this information that there are no significant hazards considerations involved in this amendment request.

The NRC has reviewed the licensee's analysis and, based on thisreview, it appears that the three standards of 10 CFR 50.92(c) are satisfied. Therefore, the NRC staff proposes to determine that the amendment request involves no significant hazards consideration.

Local Public Document Room location: Oconee County Library, 501 West South Broad Street, Walhalla, South Carolina 29691

Attorney for licensee: J. Michael McGarry, III, Winston and Strawn, 1200 17th Street, NW., Washington, DC 20036

NRC Project Director: Herbert N. Berkow

Duke Energy Corporation, Docket Nos. 50-269, 50-270, and 50-287, Oconee Nuclear Station, Units 1, 2, and 3, Oconee County, South Carolina

Date of amendment request: September 4, 1997

Description of amendment request: The proposed changes would incorporate changes to the Oconee Final Safety Analysis Report and Technical Specification Bases to address a potential unreviewed safety question associated with implementation of revised small break loss-of-coolant accident analysis. The proposed changes would address operation of the facility and single failure criteria related to the high pressure injection system.

Basis for proposed no significant hazards consideration determination: As required by 10 CFR 50.91(a), the licensee has provided its analysis of the issue of no significant hazards consideration, which is presented below:

(1) Involve a significant increase in the probability or consequences of an accident previously evaluated:

No. None of the proposed changes [have] any impact upon the probability of any accident which has been evaluated in the UFSAR [Updated Final Safety Analysis Report].

None of these changes have any impact upon the ability of the HPI [high-pressure injection] System to mitigate the consequences of a small break LOCA [loss-of-coolant accident], which is addressed below. The small break LOCA is the limiting design basis accident with respect to the HPI System operability requirements.

The proposed changes to the Bases of Specification 3.3.1 and Chapter 15 of the Oconee UFSAR include operator actions that have not previously been reviewed and approved by the [NRC] staff for licensing basis small break LOCA analyses. However, these operator actions have been included in the Emergency Operating Procedure for over 10 years and crediting these actions in the safety analyses does not result in any change to the operator's response to a small break LOCA. These actions are simply changes to the assumptions contained in the licensing basis small break LOCA analyses. The operability requirements for the HPI System contained in Specification 3.3.1 are supported by a spectrum of small break LOCA analyses based on the approved Evaluation Model described in FTI [Framatome Technologies, Inc.] topical report BAW-10192P. These small break LOCA analyses demonstrate that the acceptance criteria of 10CFR 50.46 are satisfied.

The operability requirements in Technical Specification 3.3.1.c assure that the HPI System can withstand the worst single failure and still result in two HPI pumps injecting through two trains. The full power small break LOCA analyses supporting this proposed license amendment have been performed in accordance with the approved Evaluation Model described in FTI topical report BAW-10192P.

When at or below 75% FP [full power], one HPI train provides sufficient flow to mitigate a small break LOCA. The 60% power level currently in Specification 3.3.1 is justified by analyses using the Evaluation Model described in FTI topical report BAW-10192P, considering the worst case break location and size described in LER [Licensee Event Report] 269/90-15 and Attachment 2 to this submittal. The proposed changes to the Bases of Technical Specification 3.3.1 describe the operator actions credited to justify the adequacy of the current specification and eliminate the need for the administrative restrictions imposed by LER 269/90-15. These requirements ensure that, following the worst single failure, one train of HPI would remain available to mitigate a small break LOCA.

In summary, the technical analyses described in this license amendment justify the adequacy of this specification and assure that operability of the HPI System is maintained in a manner consistent with the requirements of the design basis accidents. Therefore, it is concluded that this amendment request will not significantly increase the probability or consequences of an accident previously evaluated.

(2) Create the possibility of a new or different kind of accident from any kind of accident previously evaluated:

No. The proposed changes to the Bases of Technical Specification 3.3.1 and Chapter 15 of the Oconee UFSAR do not result in any new operator actions or changes in plant operation. The proposed changes involve crediting operator actions in the licensing basis small break LOCA analyses that have been included in the Emergency Operating Procedure for years. No new initiating events or potentially unanalyzed conditions have been created. Therefore, this proposed amendment will not create the possibility of any new or different kind of accident.

(3) Involve a significant reduction in a margin of safety.

No. The HPI System requirements associated with the proposed UFSAR and Technical Specification Bases changes are supported by analyses which demonstrate that the acceptance criteria of 10 CFR 50.46 are not violated for any small break LOCA. These analyses were performed in accordance with the Evaluation Model described in FTI topical report BAW-10192P. Therefore, it is concluded that the proposed amendment request will not result in a significant decrease in the margin of safety.

Duke [Duke Energy Corporation] has concluded, based on the above, that there are no significant hazards considerations involved in this amendment request.

The NRC has reviewed the licensee's analysis and, based on this review, it appears that the three standards of 10 CFR 50.92(c) are satisfied. Therefore, the NRC staff proposes to determine that the amendment request involves no significant hazards consideration.

Local Public Document Room location: Oconee County Library, 501 West South Broad Street, Walhalla, South Carolina 29691

Attorney for licensee: J. Michael McGarry, III, Winston and Strawn, 1200 17th Street, NW., Washington, DC 20036

NRC Project Director: Herbert N. Berkow

Entergy Operations, Inc., et al., Docket No. 50-416, Grand Gulf Nuclear Station, Unit 1, Claiborne County, Mississippi

Date of amendment request: August 6, 1997

Description of amendment request: The proposed amendment would eliminate the provisions in Technical Specification 3.8.1, ''AC Sources - Operating,'' for accelerated testing of the emergency diesel generators (DG). The proposed changes are the following: (1) the frequency of verifying DG starts and operation in Surveillance Requirements 3.8.1.2 and 3.8.1.3, respectively, would be changed to 31 days, from the present reference to Table 3.8.1-1, and (2) Table 3.8.1-1, ''Diesel Generator Test

Schedule,'' would be deleted. The emergency DG provide emergency AC power to the site with the loss of offsite AC power.

Basis for proposed no significant hazardsconsideration determination: As required by 10 CFR 50.91(a), the licensee has provided its analysis of the issue of no significant hazards consideration, which is presented below

1. This request does not involve a significant increase in the probability or consequences of an accident previously evaluated.

[These] change[s] will provide flexibility to structure the standby diesel generator maintenance program based on the risk significance of the structures, systems, and components [(SSCs)] that are within the scope of the Maintenance Rule [(10 CFR 50.65, ''Requirements for Monitoring the Effectiveness of Maintenance at Nuclear Power Plants)]. The removal of the diesel generator accelerated testing is acceptable as the maintenance rule applies site and system specific performance criteria to monitor diesel generator performance. This criteria includes a running availability and reliability goal as well as specific goals to monitor maintenance preventable functional failures. The performance criteria for the diesel generator reliability and availability established by the maintenance rule and the causal determinations and corrective actions required for maintenance preventable functional failures are considered to be an acceptable method for monitoring diesel generator performance.

The proposed change[s] [have] no effect on the probability of the initiation of an accident, because the emergency diesel generators do not serve as the initiator of any event. Additionally, as diesel generator performance will continue to be [ensured] by the maintenance rule, the proposed changes do not affect the ability to mitigate the consequences of an accident previously evaluated. The changes do not impact the diesel [generator]'s design sources, operating characteristics, system functions, or system interrelationships. The failure mechanisms for the accident previously evaluated are not affected and no additional failure modes are created that could cause an accident that has been previously evaluated. Since the diesel generator performance and reliability will continue to be [ensured] by the maintenance rule, the proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. This request does not create the possibility of a new or different kind of accident from any accident previously evaluated.

[These] proposed change[s] [do] not involve a change to the plant design or operation. As a result, the proposed change[s] [do] not affect any of the parameters or conditions that could contribute to the initiation of any accidents. The proposed changes only affect the methods used to monitor and [ensure] diesel generator performance. The performance criteria for both the diesel generator reliability and unavailability established by the maintenance rule, and the causal determinations and corrective actions required for maintenance preventable functional failures, [are] considered by [the Nuclear Regulatory Commission (NRC) in] GL [(Generic Letter)] 94-01[, ''Removal of Accelerated Testing and Special Reporting Requirements for Emergency Diesel Generators,'' issued May 31, 1994,] to be an acceptable method for monitoring diesel generator performance.

No SSC, method of operation, or system interface is altered by [these] change[s]. The changes do not impact the diesel [generator]'s design sources, operating characteristics, system functions, or system interrelationships. The failure mechanisms for the accidents are not affected, and no additional failure modes are created. Because the diesel generator performance and reliability will continue to be [ensured] by the maintenance rule, the proposed changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. This request does not involve a significant reduction in a margin [of] safety.

The proposed changes only affect the methods used to monitor and [ensure] diesel generator performance and reliability. The performance criteria for the diesel generator reliability and availability established by the maintenance rule, and the causal determinations and corrective actions required for maintenance preventable functional failures, [are] considered by [NRC in] GL 94-01 to be an acceptable method for monitoring diesel generator performance. No margin [of] safety as defined in the bases for any technical specification is impacted by these changes. [These] change[s] [do] not impact any uncertainty in the design, construction, or operation of any SSC. Diesel generator response to accident initiators is unchanged. No SSC, method of operating, or system interface is altered by [these] change[s]. The changes do not impact the diesel [generator]'s design sources, operating characteristics, system functions, or system interrelationships. Because the diesel generator performance and reliability will continue to be [ensured] by the maintenance rule, the proposed changes do not involve a significant reduction in the margin [of] safety.

The NRC staff has reviewed the licensee's analysis and, based on this review, it appears that the three standards of 10 CFR 50.92(c) are satisfied. Therefore, the NRC staff proposes to determine that the amendment request involves no significant hazards consideration.

Local Public Document Room location: Judge George W. Armstrong Library, 220 S. Commerce Street, Natchez, MS 39120

Attorney for licensee: Nicholas S. Reynolds, Esquire, Winston and Strawn, 1400 L Street, N.W., 12th Floor, Washington, DC 20005-3502

NRC Project Director: James W. Clifford, Acting

Florida Power Corporation, et al., Docket No. 50-302, Crystal River Nuclear Generating Plant, Unit No. 3, Citrus County, Florida

Date of amendment request: August 26, 1997

Description of amendment request: The proposed amendment would revise the Crystal River Unit 3 (CR3) Technical Specifications Bases (TSB) to change the design basis of the Emergency Diesel Generator (EDG) Air Handling System. Specifically, TSB Sections B 3.8.1 and B 3.8.2 would be revised to indicate that a single or dual fan operation depending upon fan supply air temperature, would maintain the temperature of the EDG engine and control rooms within the EDG manufacturer's limits.

Basis for proposed no significant hazardsconsideration determination:

The EDG Air Handling System provides continuous ventilation, and dissipates internal heat gains in the EDG engine and control rooms when the diesel is operating. Presently, the CR3 plant documentation requires operation of only one cooling fan per room to maintain the EDG room temperature within the manufacturer's limit and is inconsistent with the Final Safety Analysis Report (FSAR) which requires operation of two fans.

As part of its EDG upgrade to increase their service ratings and associated cooling analysis, the licensee has determined that operation of either a single or dual cooling fans depending upon fan supply air temperature, would achieve the required room cooling limits. The licensee has determined that reliance on the operation of two cooling fans instead of one involves an unreviewed safety question and requires a license amendment.

As required by 10 CFR 50.91(a), the licensee has provided its analysis of the issue of no significant hazards consideration, which is presented below:

1. Does not involve a significant increase in the probability or consequences of an accident previously evaluated.

The proposed change does not involve a significant increase in the probability of an accident previously evaluated. The EDG room cooling fans support operation of the EDGs which are used to mitigate design basis accidents. Although EDG availability is a contributor to the risk of station blackout, the CR-3 licensing basis assumes a station blackout without regard to EDG reliability. Therefore, the probability of previously evaluated accidents is not significantly increased.

For design basis accidents, the proposed change does not involve a significant increase in the consequences of an accident previously evaluated. The proposed change to operate both cooling fans for each EDG to

provide adequate ventilation potentially increases the probability of malfunction of equipment important to safety. However, the proposed changes do not affect the independence of the EDGs or the independence of the EDG Air Handling System and, based on single failure criteria, one EDG will be fully operable and capable of meeting its mission at all times as required by the CR-3 Technical Specifications. Therefore, no significant increase in the consequences of an accident previously evaluated, including the offsite radiological dose exists.

Based on the above, the probability of an accident previously evaluated has not been significantly increased, and this change does not involve a significant increase in the consequences of an accident previously evaluated.

2. Does not create the possibility of a new or different kind of accident from any accident previously evaluated

The proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated. Neither the fans nor the EDGs are initiators of any new accidents. The EDG room cooling fans support operation of the EDGs, which are used to mitigate design basis accidents. Reliance on two fans rather than one has reduced the redundancy of the EDG Air Handling System and increased the probability of a malfunction of an EDG. However, the proposed changes do not affect the independence of the EDGs or the independence of the EDG Air Handling System and, based on single failure criteria, one EDG will be fully operable and capable of meeting its mission at all times as required by the CR-3 Technical Specifications. Results of analyses to evaluate the failure of an EDG to operate following a design basis accident are documented in the FSAR. Therefore, this change does not create the possibility of a new or different kind of accident.

3. Does not involve a significant reduction in the margin of safety

The proposed change does not involve a significant reduction in the margin of safety. The EDG room cooling fans support operation of the EDGs. Following this change, two fans will be required to maintain the EDG engine room and EDG control room temperatures within the design basis limit when the fan supply air temperature is greater than or equal to 85°F. Reliance on two fans rather than one has reduced the redundancy of the EDG Air Handling System and slightly increased the probability of malfunction of an EDG, but only after it has run for some period of time. However, the proposed changes do not affect the independence of the EDGs or the independence of the EDG Air Handling System and, based on single failure criteria, one EDG will be fully operable and capable of meeting its mission at all times as required by the CR-3 Technical Specifications. Therefore, this change does not result in a significant reduction to the margin safety.

The NRC staff has reviewed the licensee's analysis and, based on this review, it appears that the three standards of 50.92(c) are satisfied. Therefore, the NRC staff proposes to determine that the amendment request involves no significant hazards consideration.

Local Public Document Room location: Coastal Region Library, 8619 W. Crystal Street, Crystal River, Florida 34428

Attorney for licensee: R. Alexander Glenn, General Counsel, Florida Power Corporation, MAC - A5A, P. O. Box 14042, St. Petersburg, Florida 33733-4042

NRC Project Director: Frederick J. Hebdon

Florida Power Corporation, et al., Docket No. 50-302, Crystal River Nuclear Generating Plant, Unit No. 3, Citrus County, Florida

Date of amendment request: September 9, 1997

Description of amendment request: The proposed amendment would revise the Crystal River 3 (CR3) Final Safety Analysis Report (FSAR) to reflect the revised analysis for the hypothetical Makeup System Letdown Line Failure Accident. In the original analysis, the event was modeled as being terminated by an automatic isolation of the failed letdown line on low reactor coolant system pressure. The revised analysis has modeled the event as being terminated by manual operator action to isolate the line. The licensee has determined that reliance on a manual operator action in place of the automatic action involves an unreviewed safety question (USQ) and requires prior Nuclear Regulatory Commission (NRC) approval. Other FSAR changes are being proposed to clarify that this accident is a hypothetical event that is presented only to demonstrate that the dose consequences are below 10 CFR Part 100 limits. The licensee submitted its proposed FSAR changes which, upon NRC approval, will be incorporated in the next revision to the FSAR.

Basis for proposed no significant hazardsconsideration determination: As required by 10 CFR 50.91(a), the licensee has provided its analysis of the issue of no significant hazards consideration, which is presented below:

1. Does not involve a significant increase in the probability or consequences of an accident previously evaluated.

This change involves a revision to the analysis for the Makeup System Letdown Line Failure Accident. The revised analysis assesses the resultant change in consequences of this event based on the actions specified in EOP-3 [Emergency Operating Procedure - 3] to manually isolate the letdown line failure. No changes have been made to any precursors to this event. Therefore, the probability of an accident previously evaluated has not been increased.

This change has resulted in an increase in the calculated doses due to the greater release of reactor coolant prior to termination of the leak. Although the doses have increased, they remain significantly less than the limits of 10 CFR 100. These doses also remain lower than the resultant doses for the design basis LOCA [loss-of-coolant-accident].

The revised analysis evaluates the consequences of this accident based on the replacement of the automatic isolation of the letdown line with a manual operator action to isolate the letdown line. This action was added to EOP-3 when it was identified that the manual initiation of the HPI [high pressure injection] system directed by the EOP would interfere with the automatic isolation signal assumed to terminate this event. Manual initiation of the HPI system for a LSCM [loss of subcooling margin] event is consistent with the symptomatic philosophy of the EOPs. This philosophy is utilized in order to manage a wide range of event/leaks that would be indicated by a LSCM. Early initiation of the HPI system is intended to ensure adequate core cooling as the primary concern during a LSCM event.

Prior to the addition of the EOP step to manually isolate the letdown line, the EOP directed actions towards locating and isolating the source of the leak resulting in the LSCM. However, due to the potential significance of the letdown line failure which can result in RCS [reactor coolant system] leakage outside the reactor building, the manual action was added early in EOP-3 to isolate the letdown line. This action is proactive in ensuring early isolation of the potential leakage path and is consistent with the concept of a ''simple'' operator action (Reference 9) [NRC to Florida Power Corporation letter, Long-term modifications regarding emergency core cooling system Small Break Analysis problem, dated September 26, 1978].

Crediting a manual operator action instead of the automatic isolation introduces the possibility of a malfunction of a different type (i.e., operator error). The revised analysis assumes that operator action to isolate the letdown line occurs 10 minutes following a LSCM. Although the probability of operator error during this action may be greater than the probability of the failure of the automatic function, the consequences of this error would be small. Several indications would be available to the operator to identify the continued loss of coolant through this line. As discussed above, the radiological dose calculated by this event remains a small fraction of the limits of 10 CFR Part 100. Therefore, adequate time would exist for the identification of an operator error and correction of this error before any significant increase in the consequences of this event would occur.

Additionally, the probability for operator error in this event is considered to be small due to the extensive training plant operators receive regarding the EOPs and the simple nature of the action. Validation of the required actions in the EOPs, including isolation of the letdown line, is performed on the plant simulator to ensure the validity of the EOPs as well as to ensure that these actions can be performed as required.

The clarification added to FSAR Section 5.4.4.2 and 14.2.2.6.1 reflects the previously approved evaluation for pipe rupture criteria outside the reactor building for CR-3. A break in the high energy portion of the letdown line outside containment is not considered a credible event. This accident is presented only to demonstrate that the dose consequences from a postulated break in the letdown line outside containment remain below the 10 CFR Part 100 limits.

Based on the above, this change does not involve a significant increase in the consequences of an accident previously evaluated.

2. Does not create the possibility of a new or different kind of accident from any accident previously evaluated.

This change does not involve any modification to the plant nor a change in the operation of the plant prior to the postulated failure of the letdown line. This change only evaluates the radiological dose consequences of the actions taken following the line failure. The addition of the action to manually isolate the letdown line for a LSCM event is consistent with the need to isolate potential RCS leakage paths and replaces the automatic isolation that was previously assumed to occur. Therefore, this change does not create the possibility of a new or different kind of accident.

3. Does not involve a significant reduction in the margin of safety.

This change does not result in a reduction to the margin of safety as defined in the Bases for any Technical Specifications. As discussed above, the radiological doses for the revised analysis have increased but remain a small fraction of the 10 CFR Part 100 limits.

The NRC staff has reviewed the licensee's analysis and, based on this review, it appears that the three standards of 50.92(c) are satisfied. Therefore, the NRC staff proposes to determine that the amendment request involves no significant hazards consideration.

Local Public Document Room location: Coastal Region Library, 8619 W. Crystal Street, Crystal River, Florida 34428

Attorney for licensee: R. Alexander Glenn, General Counsel, Florida Power Corporation, MAC - A5A, P. O. Box 14042, St. Petersburg, Florida 33733-4042

NRC Project Director: Frederick J. Hebdon

Florida Power and Light Company, et al., Docket Nos. 50-335 and 50-389, St. Lucie Plant, Unit Nos. 1 and 2, St. Lucie County, Florida

Date of amendment request: August 22, 1997

Description of amendment request: The proposed amendment revises Technical Specification (TS) 4.0.5, Surveillance Requirements for Inservice Inspection and Testing of ASME Code Class 1, 2, and 3 components, to relocate the Inservice Testing Program requirements from TS 4.0.5 to the Administrative Controls Section 6.8, Procedures and Programs. The proposed amendment also provides conforming changes to several Surveillance Requirements to change the reference from TS 4.0.5 to the Inservice Testing Program.

Basis for proposed no significant hazardsconsideration determination: As required by 10 CFR 50.91(a), the licensee has provided its analysis of the issue of no significant hazards consideration, which is presented below:

(1) Operation of the facility in accordance with the proposed amendments would not involve a significant increase in the probability or consequences of an accident previously evaluated.

The proposed amendments do not involve a significant increase in the probability or consequences of an accident previously evaluated. There are no changes to the testing and evaluation related to pumps and valves in the Inservice Testing Program. The only substantive change allows the implementation of alternate testing provisions where Code-requirements are impractical and the NRC has not formally provided written approval. Since impractical testing would not be performed in any event, the actual testing program is unaffected.

(2) Operation of the facility in accordance with the proposed amendments would not create the possibility of a new or different kind of accident from any accident previously evaluated.

The use of the modified specifications cannot create the possibility of a new or different kind of accident from any previously evaluated since the proposed amendments will not change the physical plant or the modes of plant operation defined in the facility operating license. No new failure mode is introduced due to implementation of this administrative change since the proposed changes do not involve the addition or modification of equipment, nor do they alter the design or operation of affected plant systems, structures, or components.

(3) Operation of the facility in accordance with the proposed amendments would not involve a significant reduction in a margin of safety.

The operating limits and functional capabilities of the affected systems, structures, and components remain unchanged by the proposed amendments, therefore, these changes do not involve a significant reduction in the margin of safety.

The NRC staff has reviewed the licensee's analysis and, based on this review, it appears that the three standards of 50.92(c) are satisfied. Therefore, the NRC staff proposes to determine that the amendment request involves no significant hazards consideration.

Local Public Document Room location: Indian River Community College Library, 3209 Virginia Avenue, Fort Pierce, Florida 34981-5596

Attorney for licensee: M.S. Ross, Attorney, Florida Power & Light, P.O. Box 14000, Juno Beach, Florida 33408-0420

NRC Project Director: Frederick J. Hebdon

Florida Power and Light Company, Docket Nos. 50-250 and 50-251, Turkey Point Plant Units 3 and 4, Dade County, Florida

Dates of amendment request: August 27, 1997

Description of amendment request: The licensee proposed modifying the Turkey Point Units 3 and 4 Technical Specifications (TS) to delete a sentence from section 6.2.2.f and add clarification to section 6.2.2.f of the Administrative section of TS to allow the use of up to 12 hour shifts without routine heavy use of overtime.

Basis for proposed no significant hazards consideration determination: As required by 10 CFR 50.91(a), the licensee has provided its analysis of the issue of no significant hazards consideration, which is presented below.

(1) Operation of the facility in accordance with the proposed amendments would not involve a significant increase in the probability or consequences of an accident previously evaluated.

The proposed change does not involve a physical or procedural change to any structure, system or component that significantly effects the probability or consequences of any accident or malfunction of equipment important to safety. The proposed changes will allow the use of 12 hour shifts for a nominal 40 hours per week.

This change is only administrative in nature and has no significant impact on the probabilities or consequences of any evaluated accident or malfunction of equipment important to safety.

(2) Operation of the facility in accordance with the proposed amendments would not create the possibility of a new or different kind of accident from any accident previously evaluated.

The proposed amendment will not change the physical plant or modes of plant operation defined in the Turkey Point Units 3 and 4 operating license. The proposed amendment will not involve addition or modification of permanent equipment for any systems structures or components at Turkey Point.

The change does modify the controls on working shift hours for operating personnel without significantly changing the hours worked per week and retains the current limitations on excessive overtime. The changes are administrative in nature.

Consequently, operation of either unit in accordance with the proposed amendment would not create the possibility of a new or different kind of accident from any accident previously evaluated.

(3) Operation of the facility in accordance with the proposed amendments would not involve a significant reduction in a margin of safety.

The proposed amendment will allow the use of 12 hour shifts by virtue of the administrative change. This will result in fewer turnovers per day and will allow more contiguous days off between work shifts. The sum of these 12 hour work shift features will be more rested crews with better communications between shifts. The proposed change will not alter the basis for any Technical Specification that is related to the establishment of, or maintenance of, a nuclear safety margin.

Consequently, operation of Turkey Point Units 3 and 4 in accordance with this proposed amendment would not involve a significant reduction in margin of safety.

The NRC staff has reviewed the licensee's analysis and, based on this review, it appears that the three standards of 50.92(c) are satisfied. Therefore, the NRC staff proposes to determine that the amendment request involves no significant hazards consideration.

Local Public Document Room location: Florida International University, University Park, Miami, Florida 33199

Attorney for licensee: J. R. Newman, Esquire, Morgan, Lewis & Bockius, 1800 M Street, NW., Washington, DC 20036

NRC Project Director: Frederick J. Hebdon

Houston Lighting & Power Company, City Public Service Board of San Antonio, Central Power and Light Company, City of Austin, Texas, Docket Nos. 50-498 and 50-499, South Texas Project, Units 1 and 2, Matagorda County, Texas

Date of amendment request: August 18, 1997

Description of amendment request: The proposed amendment would revise Technical Specification 3.7.1.6, Atmospheric Steam Relief Valves, to ensure the automatic feature of the steam generator power operated relief valve remains operable during Modes 1 and 2. In addition, the proposed change adds a surveillance requiring that a channel calibration on the steam generator power operated relief valve be performed every 18 months.

Basis for proposed no significant hazardsconsideration determination: As required by 10 CFR 50.91(a), the licensee has provided its analysis of the issue of no significant hazards consideration, which is presented below:

The South Texas Project proposed to revise Technical Specification 3.7.1.6 to ensure the automatic feature of the Steam Generator Power Operated Relief Valve remains operable during Modes 1 and 2. The South Texas Project has evaluated this proposed amendment and determined that it involves no significant hazards considerations based on the following:

A. The proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

The methodologies used in the accident analyses remain unchanged. The automatic actuation of the Steam Generator Power Operated Relief Valves is not a new design feature. The effects of the inadvertent opening of a Steam Generator Power Operated Relief Valve are currently analyzed as described in Section 15.1.4 of the Updated Final Safety Analysis Report. The radiological consequences for the SBLOCA [small-break loss-of-coolant accident] event presented in the Updated Final Safety Analysis Report remain unchanged. The calculated Peak Clad Temperature remains substantially below the 2200°F acceptance limit of 10[]CFR[]50.46.

B. The proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

The automatic actuation of the steam generator power operated relief valves is not an accident initiator for the SBLOCA event. The automatic actuation of the steam generator power operated relief valves currently exists at the South Texas Project and is not a new design feature. The description of the Steam Generator Power Operated Relief Valves currently exists in the Updated Final Safety Analysis Report. This change does not represent a change to the facility and does not affect the safety functions and reliability of systems, structures, or components in any new manner. Operating procedures have a temporary administrative control to ensure the automatic actuation of the Steam Generator Power Operated Relief Valves remains operable in Modes 1 and 2. This condition will become permanent with the approval of the Technical Specification Amendment proposal.

C. The proposed change does not involve a significant reduction in a margin of safety.

The proposed change results in the calculated Peak Clad Temperature remaining well below the acceptance limit of 10[]CFR[]50.46 and comparable to the results currently described in the Updated Final Safety Analysis Report.

Therefore, the South Texas Project has concluded that the proposed change does not involve a significant hazards considerations.

The NRC staff has reviewed the licensee's analysis and, based on this review, it appears that the standards of 10 CFR 50.92(c) are satisfied. Therefore, the NRC staff proposes to determine that the request for amendments involves no significant hazards consideration.

Local Public Document Room location: Wharton County Junior College, J. M. Hodges Learning Center, 911 Boling Highway, Wharton, TX 77488

Attorney for licensee: Jack R. Newman, Esq., Morgan, Lewis & Bockius, 1800 M Street, N.W., Washington, DC 20036-5869

NRC Project Director: James W. Clifford, Acting

Northeast Nuclear Energy Company, et al., Docket No. 50-336, Millstone Nuclear Power Station, Unit No. 2, New London, Connecticut

Date of amendment request: September 2, 1997

Description of amendment request: The proposed changes to the Technical Specifications (TSs) would modify the maximum allowed containment pressure specified in TS 3.6.1.4, ''Containment Systems Internal Pressure,'' from 2.1 psig to 1.0 psig. The TS Bases, Section 3/4.6.1.4, would also be revised to reflect the new maximum allowed containment pressure.

Basis for proposed no significant hazardsconsideration determination: As required by 10 CFR 50.91(a), the licensee has provided its analysis of the issue of no significant hazards consideration, which is presented below:

The proposed change does not involve an SHC [significant hazards consideration] because the changes would not:

1. Involve a significant increase in the probability or consequences of an accident previously evaluated.

The proposed change will reduce the maximum allowed value for containment pressure specified in Technical Specification 3.6.1.4, ''Containment Systems Internal Pressure.'' This change will improve the margin between the peak containment pressure following a main steam line break (most limiting accident for peak containment pressure at Millstone Unit No. 2) and the containment design pressure limit of 54 psig. Reducing the initial containment pressure will result in a reduction in peak containment pressure.

To ensure the assumption of a lower initial containment pressure is maintained, a change to Technical Specification 3.6.1.4 is necessary.

The proposed change to Technical Specification 3.6.1.4 will allow one of the initial assumptions used in the analysis for peak containment pressure following a main steam line break to be changed. However, this change will not affect how any of the plant systems function to mitigate design basis accidents and will not require any changes to mitigation procedures. The acceptance criteria of a peak containment pressure less than the design limit of 54 psig remains the same. Therefore, this change does not significantly increase the probability or consequences of an accident previously evaluated.

2. Create the possibility of a new or different kind of accident from any accident previously evaluated.

The proposed change does not alter the way any structure, system, or component functions and does not alter the manner in which the plant is operated. It does not

introduce any new failure modes and conservatively alters an assumption made in the main steam line break safety analysis.

Therefore, the change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Involve a significant reduction in a margin of safety.

This proposed change will reduce the maximum allowed value for containment pressure specified in Technical Specification 3.6.1.4, ''Containment Systems Internal Pressure.'' This change will improve the margin between the peak containment pressure following a main steam line break (most limiting accident for peak containment pressure at Millstone Unit No. 2) and the containment design pressure limit 54 psig. Starting at a lower initial containment pressure will result in a lower peak containment pressure. To ensure the assumption of a lower initial containment pressure is maintained, a change to Technical Specification 3.6.1.4 is necessary.

This more restrictive change in the maximum allowed containment pressure will result in the use of a lower initial containment pressure in the analysis of a main steam line break accident. However, the analysis acceptance criteria of a peak accident containment pressure less than 54 psig, will remain the same. Therefore, there is no significant reduction in a margin of safety as defined in the Bases of Technical Specification 3.6.1.4.

The NRC staff has reviewed the licensee's analysis and, based on this review, it appears that the three standards of 10 CFR 50.92(c) are satisfied. Therefore, the NRC staff proposes to determine that the amendment request involves no significant hazards consideration.

Local Public Document Room location: Learning Resources Center, Three Rivers Community-Technical College, 574 New London Turnpike, Norwich, CT 06360, and the Waterford Library, ATTN: Vince Juliano, 49 Rope Ferry Road, Waterford, CT 06385

Attorney for licensee: Lillian M. Cuoco, Esq., Senior Nuclear Counsel, Northeast Utilities Service Company, P.O. Box 270, Hartford, CT 06141-0270

NRC Deputy Director: Phillip F. McKee

Northeast Nuclear Energy Company, et al., Docket No. 50-336, Millstone Nuclear Power Station, Unit No. 2, New London County, Connecticut

Date of amendment request: September 2, 1997

Description of amendment request: The proposed amendment would change the Technical Specifications (TSs) to: (1) Combine TS 3.6.2.1, ''Containment Spray System,'' and TS 3.6.2.2, ''Containment Air Recirculation System,'' into one specification which would reduce the allowed outage time for one inoperable containment spray (CS) train or one inoperable containment air recirculation (CAR) cooler from 30 days to 7 days; increase the allowed outage time for two inoperable CAR coolers from 48 hours to 7 days; add an allowed outage time of 48 hours (instead of entering TS 3.0.3) for one inoperable CS train and two inoperable CAR coolers or three or four inoperable CAR coolers; provide specific guidance on when to enter TS 3.0.3; and expand the applicable TS Bases to reflect these changes; (2) Modify the definition of containment integrity and TS 3.6.1.1, ''Containment Integrity,'' to indicate that the operability of the automatic isolation valve system is satisfied by the use of the containment isolation trip push buttons in Mode 4, and expand the TS Bases to reflect these change; (3) Add an exception to the reactor coolant flow rate surveillance requirement, TS 4.1.1.3, whenever there is a reduction in reactor coolant system boration while in Modes 2 and 3 because the reactor coolant pumps are required to be in operation; (4) Delete the reactor coolant system leakage surveillance requirements, TS 4.4.6.2.a and TS 4.4.6.2.b, which require monitoring the containment atmosphere particulate radioactivity and containment sump inventory, respectively; (5) Modify emergency core cooling system surveillance requirement, TS 4.5.2.e, to allow the use of alternative methods to verify that the throttle valves in Table 4.5-1 are in the correct position and expand the TS bases to address the alternative methods; (6) Modify TS 5.5.1,'' Emergency Core Cooling Systems,'' by deleting the word ''original'' since the design has been modified; and (7) Make editorial changes to terminology and item numbering.

Basis for proposed no significant hazardsconsideration determination: As required by 10 CFR 50.91(a), the licensee has provided its analysis of the issue of no significant hazards consideration, which is presented below:

The proposed changes do not involve an SHC [significant hazards consideration] because the changes would not:

1.Involve a significant increase in the probability or consequences of an accident previously evaluated.

The proposed change to combine Technical Specifications 3.6.2.1 and 3.6.2.2 into one specification reduces the allowed outage time for one inoperable containment spray (CS) train or one inoperable containment air recirculation (CAR) cooler from 30 days to 7 days; increases the allowed outage time for two inoperable CAR coolers from 48 hours to 7 days; adds an allowed outage time of 48 hours (instead of entering Technical Specification 3.0.3) for one inoperable CS train and two inoperable CAR coolers, or three or four inoperable CAR coolers; and provides specific guidance when it is necessary to enter Technical Specification 3.0.3 will not affect how these systems function to mitigate design basis accidents. Therefore, this change does not significantly increase the probability or consequences of an accident previously evaluated.

The proposed changes to modify the definition of containment integrity, modify the Technical Specification 3.6.1.1, ''Containment Integrity,'' and expand the Bases to explain why automatic containment isolation valves are operable in Mode 4 have no affect on any containment isolation valve or Engineered Safety Feature Actuation System (ESFAS) component. These components will still function as designed to mitigate design basis accidents. Therefore, this change does not significantly increase the probability or consequences of an accident previously evaluated.

The proposed change to provide an exception to Surveillance Requirement 4.1.1.3 when the plant is in Modes 1 and 2 will not result in any new approach to plant operation, it simply removes the requirement to perform an unnecessary surveillance. The minimum coolant flow through the core during a reduction in Reactor Coolant System (RCS) boron concentration will still be met. Therefore, this change does not significantly increase the probability or consequences of an accident previously evaluated.

The proposed change to delete Surveillance Requirements (SRs) 4.4.6.2.a and 4.4.6.2.b does not reduce the operability requirements for any equipment used to monitor RCS leakage. The equipment covered by these 2 SRs, containment atmosphere particulate radioactivity monitors and containment sump inventory monitor, provide early indication that RCS leakage exists, but do not provide the specific information (amount of leakage) necessary to verify operation within the leakage limits contained in Technical Specification 3.4.6.2, ''Reactor Coolant System Leakage.'' Operability of the containment atmosphere particulate radioactivity monitors and containment sump inventory monitor is verified by SRs 4.4.6.1.a and 4.4.6.1.b. Therefore, this change does not significantly increase the probability or consequences of an accident previously evaluated.

The proposed change to Surveillance Requirement 4.5.2.e. to allow the use of alternate methods does not reduce operability or surveillance requirements for any of the Emergency Core Cooling System (ECCS) throttle valves. Therefore, these ECCS throttle valves will continue to function as designed to mitigate design basis accidents. Therefore, this change does not significantly increase the probability or consequences of an accident previously evaluated.

The proposed change to Technical Specification 5.5.1 has no affect on how the ECCS operates. The ECCS will still function as designed to mitigate design basis accidents. Therefore, this change does not significantly increase the probability or consequences of an accident previously evaluated.

The proposed changes to add information to the Bases of the affected Technical Specifications, and make editorial changes to terminology and item numbering will have no affect on equipment operation. Therefore, all associated equipment will continue to function as designed to mitigate design basis accidents. Therefore, this change does not significantly increase the probability or consequences of an accident previously evaluated.

Thus, this License Amendment Request does not impact the probability of an accident previously evaluated nor does it involve a significant increase in the consequences of an accident previously evaluated.

2. Create the possibility of a new or different kind of accident from any accident previously evaluated.

The proposed changes do not alter the plant configuration (no new or different type of equipment will be installed) or require any new or unusual operator actions. They do not alter the way any structure, system, or component functions and do not alter the manner in which the plant is operated. The proposed changes do not introduce any new failure modes. They will not alter assumptions made in the safety analysis and licensing basis. The affected components and systems will still function as designed to mitigate design basis accidents.

Therefore, these changes do not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Involve a significant reduction in a margin of safety.

The proposed changes will not reduce the margin of safety since they have no impact on any safety analysis assumption. The proposed changes do not decrease the scope of equipment currently required to be operable or subject to surveillance testing, nor do the proposed changes affect any instrument setpoints or equipment safety functions. The requirement to check containment radiation and containment sump level every 12 hours has been eliminated. However, this equipment is still required to be operable, and the surveillance requirements to verify operability have not been changed. Therefore, this equipment will be available to provide early indication of RCS leakage.

The effectiveness of Technical Specifications will be maintained since the changes will not alter the operation of any component or system. In addition, the changes are consistent with the new, improved Standard Technical Specifications (STS) for Combustion Engineering plants (NUREG-1432).

Therefore, there is not significant reduction in a margin of safety.

The NRC staff has reviewed the licensee's analysis and, based on this review, it appears that the three standards of 10 CFR 50.92(c) are satisfied. Therefore, the NRC staff proposes to determine that the amendment request involves no significant hazards consideration.

Local Public Document Room location: Learning Resources Center, Three Rivers Community-Technical College, 574 New London Turnpike, Norwich, CT 06360, and the Waterford Library, ATTN: Vince Juliano, 49 Rope Ferry Road, Waterford, CT 06385

Attorney for licensee: Lillian M. Cuoco, Esq., Senior Nuclear Counsel, Northeast Utilities Service Company, P.O. Box 270, Hartford, CT 06141-0270

NRC Deputy Director: Phillip F. McKee

Northeast Nuclear Energy Company, et al., Docket No. 50-336, Millstone Nuclear Power Station, Unit No. 2, New London, Connecticut

Date of amendment request: September 3, 1997

Description of amendment request: The proposed amendment would revise the Updated Final Safety Analysis Report (UFSAR) by changing the length of time the emergency diesel generators (EDGs) would operate following a loss-of-coolant accident (LOCA) based on the capacity of the onsite diesel fuel oil supply required by the current Technical Specifications (TSs). The UFSAR indicates that the diesel fuel oil supply tanks contain a sufficient amount of fuel to operate one EDG for about 7 days and the other EDG 1 hour following a LOCA based on the TS minimum limit of 24,000 gallons of diesel fuel oil stored onsite. Northeast Nuclear Energy Company (the licensee) has performed calculations indicating that both EDGs can initially operate, following a LOCA, for 24 hours and one EDG can continue to operate for an additional 3.5 days based on the TS requirement to have a minimum of 24,000 gallons of fuel oil stored onsite. The licensee has determined that the difference in the EDGs operating time, as a result of the new calculations, constitutes an unreviewed safety question and requests approval to revise the UFSAR.

Specifically, the proposed license amendment would revise the UFSAR, Section 8.3, ''Emergency Generators,'' to reflect the operating times for the EDGs based on the TS-required onsite fuel oil supply. Additional requirements would also be added indicating that the existing nonsafety-related underground fuel oil storage tank would be required to maintain about 17,700 gallons of fuel oil when the unit is operating in Modes 1 through 4. This requirement would be included in the Technical Requirements Manual, which also will require that the amount of stored fuel oil be verified by surveillance requirements similar to the TS-required surveillances for the safety-related fuel oil supply. This change will increase the total time that one EDG can continue to operate following a LOCA from 3.5 to 7 days. The Emergency Plan (EP) procedures require that an evaluation be performed within 4 hours following a LOCA or loss of normal power (offsite power) to determine if additional fuel oil is needed from an offsite source. The licensee has a contract with a supplier for the delivery of fuel oil to the Millstone site. The EP procedures also require that load shedding recommendations be made within 24 hours. The recommendations will vary depending on the situation and are another way to extend the operating times for the EDGs.

Basis for proposed no significant hazardsconsideration determination: As required by 10 CFR 50.91(a), the licensee has provided its analysis of the issue of no significant hazards consideration, which is presented below:

The proposed change does not involve an SHC [significant hazards consideration] because the changes would not:

1. Involve a significant increase in the probability or consequences of an accident previously evaluated.

The proposed change expands FSAR Section 8.3, ''Emergency Generators,'' to discuss the length of time the emergency diesel generators (EDGs) will operate following a loss of coolant accident (LOCA) and a loss of normal power (LNP), utilizing only onsite diesel fuel oil sources. The onsite sources include the Technical Specification required volume of 12,000 gallons in each diesel oil supply tank and an additional approximate 17,700 gallons that will be maintained in the underground diesel oil storage tank. This onsite volume of diesel fuel oil is sufficient to allow two EDGs to operate at rated load (2750 KW) for 24 hours following a design basis LOCA and LNP. The remaining diesel fuel oil will be sufficient for one EDG to continue operation at rated load for a total of 7 days from event initiation.

The proposed change to the FSAR has no effect on EDG operation and reliability. The EDGs will continue to operate as designed to supply the electrical loads assumed to mitigate the design basis accidents. Therefore, there is no significant increase in the probability or consequences of an accident previously evaluated.

2. Create the possibility of a new or different kind of accident from any accident previously evaluated.

The proposed change will not alter the plant configuration (no new or different type of equipment will be installed) or require any new or unusual operator actions. Plant operating procedures will be changed. However, the changes will not require the performance of any task not currently performed by the plant operators. Emergency Plan procedures already specify the action to provide load shedding recommendations within 24 hours of a LOCA and LNP, and to evaluate the need to order additional fuel from offsite sources within four hours after the accident.

The proposed change does not alter the way any structure, system, or component

functions and does not alter the manner in which the plant is operated. It does not introduce any new failure modes and does not alter assumptions made in the safety analysis.

Therefore, the change will not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Involve a significant reduction in a margin of safety.

The length of time the emergency diesel generators (EDGs) will operate following a Loss of Coolant Accident and a Loss of Normal Power, utilizing only the onsite diesel fuel oil sources required by Technical Specifications has been recalculated. The new EDG run times do not agree with the current EDG run times contained in the Millstone Unit No. 2 Final Safety Analysis Report (FSAR), and therefore do not agree with the current Technical Specification Bases for 3.8.1.1, ''A.C. Sources - Operating,'' and 3.8.1.2, ''A.C. Sources - Shutdown.''

This deviation does result in a reduction in the margin of safety as defined in the Technical Specification Bases for 3.8.1.1, ''A.C. Sources - Operating,'' and 3.8.1.2, ''A.C. Sources - Shutdown.'' However, this proposed change will require additional diesel fuel oil to be maintained onsite in the non-seismic underground diesel oil storage tank. This will ensure sufficient diesel fuel oil will be maintained onsite to provide a 7 day supply, assuming a seismic event does not occur. Therefore, this is not a significant reduction in the margin of safety as defined in the Technical Specification Bases for 3.8.1.1, ''A.C. Sources - Operating,'' and 3.8.1.2, ''A.C. Sources - Shutdown.''

The NRC staff has reviewed the licensee's analysis and, based on this review, it appears that the three standards of 10 CFR 50.92(c) are satisfied. Therefore, the NRC staff proposes to determine that the amendment request involves no significant hazards consideration.

Local Public Document Room location: : Learning Resources Center, Three Rivers Community-Technical College, 574 New London Turnpike, Norwich, CT 06360, and the Waterford Library, ATTN: Vince Juliano, 49 Rope Ferry Road, Waterford, CT 06385

Attorney for licensee: Lillian M. Cuoco, Esq., Senior Nuclear Counsel, Northeast Utilities Service Company, P.O. Box 270, Hartford, CT 06141-0270

NRC Deputy Director: Phillip F. McKee

Public Service Electric & Gas Company, Docket No. 50-354, Hope Creek Generating Station, Salem County, New Jersey

Date of amendment request: August 20, 1997

Description of amendment request: The proposed amendment would change the Technical Specifications (TSs) to provide for: (1) the relocation of suppression pool volume references in Limiting Condition for Operation (LCO) 3.5.3 to the Hope Creek (HC) Updated Final Safety Analysis Report (UFSAR) and TS Bases as appropriate; (2) the revision of the suppression pool volume currently listed in LCO 3.5.3.b; (3) the relocation of the suppression pool volume references in LCO 3.6.2.1.a.1 to the UFSAR and TS Bases; and (4) the revision to the suppression pool volume reference in TS 5.2.1 to reference the TS Bases section where this information will reside.

Basis for proposed no significant hazardsconsideration determination: As required by 10 CFR 50.91(a), the licensee has provided its analysis of the issue of no significant hazards consideration, which is presented below:

1. The proposed changes do not involve a significant increase in the probability or consequences of an accident previously evaluated.

The proposed TS revisions involve: 1) no changes to the operation of any systems or components in normal or accident operating conditions; and 2) no significant changes to existing structures, systems or components. The installation of the new strainers will be justified separately using the provisions of 10CFR50.59. The relocation of Technical Specification references to suppression pool volume to the UFSAR and/or TS Bases will not adversely impact the safety-related functions of the suppression pool or its supported systems since any changes to suppression pool volume will be subject to 10CFR50.59 provisions. The impact of the new strainers on ECCS [emergency core cooling system] performance in Operational Conditions 4 and 5 has been determined to be negligible, with less than a 0.3% decrease in suppression pool water volume at the minimum specified suppression pool water level limit. In addition, suppression pool volume is not a parameter involved in the initiation of any accident. Therefore these changes will not significantly increase the probability of an accident previously evaluated. To the extent practicable, these proposed changes were developed consistent with the changes approved by the NRC when developing NUREG-1433, ''Standard Technical Specifications, General Electric Plants, BWR/4'', with the intent of having the relocated information controlled in other plant documents subject to 10CFR50.59 provisions. Since the plant systems associated with these proposed changes will still be capable of: 1) meeting all applicable design basis requirements; and 2) retain the capability to mitigate the consequences of accidents described in the HC UFSAR, the proposed changes were determined to be justified. Therefore, these changes will not involve a significant increase in the consequences of an accident previously evaluated.

2. The proposed change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

Neither the relocation of Technical Specification references to suppression pool volume nor the revision of the suppression pool volume references for Operational Conditions 4 and 5 (COLD SHUTDOWN and REFUELING) will adversely impact the operation of any safety related component or equipment. Since the proposed changes involve: 1) no changes to the operation of any systems or components; and 2) no significant changes to existing structures, systems or components, there can be no impact on the occurrence of any accident. To the extent practicable, these proposed changes were developed consistent with the changes approved by the NRC when developing NUREG-1433, ''Standard Technical Specifications, General Electric Plants, BWR/4'', with the intent of having the relocated information controlled in other plant documents subject to 10CFR50.59 provisions. Furthermore, there is no change in plant testing proposed in this change request which could initiate an event. Therefore, these changes will not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. The proposed change does not involve a significant reduction in a margin of safety.

Removal and relocation of the Technical Specification references to suppression pool volume is consistent, to the extent practicable, with the changes approved by the NRC when developing NUREG-1433, ''Standard Technical Specifications, General Electric Plants, BWR/4''. The information retained in the Technical Specifications for minimum suppression pool water level and the information retained in the UFSAR and Technical Specification Bases will ensure that the suppression pool and supported components will remain capable of performing their intended safety functions. Any changes to suppression pool volume information retained in the UFSAR or Technical Specification Bases will be subject to the provisions of 10CFR50.59 and a separate safety evaluation would be developed to support any proposed changes that would subsequently be made. The impact of the new strainers on ECCS performance in Operational Conditions 4 and 5 has been determined to be negligible, with less than a 0.3% decrease in suppression pool water volume in the minimum specified suppression pool water level limit. By retaining the 5 inch minimum suppression pool water level limit within the TS, adequate provisions for: 1) NPSH [net-positive suction head] for ECCS pump suction; 2) recirculation volume; and 3) vortex prevention are maintained. Therefore, the changes contained in this request do not result in a significant reduction in a margin of safety.

The NRC staff has reviewed the licensee's analysis and, based on this review, it appears that the three standards of 10 CFR 50.92(c) are satisfied. Therefore, the NRC staff proposes to determine that the amendment request involves no significant hazards consideration.

Local Public Document Room location: Pennsville Public Library, 190 S. Broadway, Pennsville, NJ 08070

Attorney for licensee: Jeffrie J. Keenan, Esquire, Nuclear Business Unit - N21,

P.O. Box 236, Hancocks Bridge, NJ 08038

NRC Project Director: John F. Stolz

Rochester Gas and Electric Corporation, Docket No. 50-244, R. E. Ginna Nuclear Power Plant, Wayne County, New York

Date of amendment request: August 19, 1997

Description of amendment request: The proposed amendment would revise the Ginna Station Improved Technical Specifications (ITSs) by adding a note to the Containment Spray (CS) Limiting Condition for Operation (LCO) 3.6.6 which would allow the CS pumps in MODE 4 to be placed in pull-stop, and motor-operated valves (MOVs) 896A and 896B to have their DC control power restored with the valves placed in the closed position in order to perform interlock and valve testing of MOVs 857A, 857B, and 857C. A time limit of 2 hours is placed on this configuration for each test.

Basis for proposed no significant hazardsconsideration determination: As required by 10 CFR 50.91(a), the licensee has provided its analysis of the issue of no significant hazards consideration, which is presented below:

1. Operation of Ginna Station in accordance with the proposed changes does not involve a significant increase in the probability or consequences of an accident previously evaluated. The change is to add a note to LCO 3.6.6 which allows the CS pumps to be placed in pull-stop and MOVs 896A and 896B to have power restored and closed in MODE 4. This does not increase the probability of any accident previously evaluated since the CS system provides mitigation capability only (i.e., does not initiate any accident). In addition, there is no design basis accident previously evaluated in MODE 4 which would require the use of CS. Therefore, these changes do not involve a significant increase in the probability or consequences of an accident previously analyzed.

2. Operation of Ginna Station in accordance with the proposed changes does not create the possibility of a new or different kind of accident from any accident previously evaluated. The proposed changes do not involve a physical alteration of the plant (i.e., no new or different type of equipment will be installed) or changes in the methods governing normal plant operation. Thus, this change does not create the possibility of a new or different kind of accident from any accident previously evaluated.

3. Operation of Ginna Station in accordance with the proposed changes does not involve a significant reduction in a margin of safety. The proposed changes will not reduce a margin of plant safety because the CS function is not required for any design basis accident in MODE 4. In addition, time restraints [are] placed on the proposed plant configuration. As such, no question of safety is involved, and the change does not involve a significant reduction in a margin of safety.

The NRC staff has reviewed the licensee's analysis and, based on this review, it appears that the three standards of 10 CFR 50.92(c) are satisfied. Therefore, the NRC staff proposes to determine that the amendment request involves no significant hazards consideration.

Local Public Document Room location: Rochester Public Library, 115 South Avenue, Rochester, New York 14610

Attorney for licensee: Nicholas S. Reynolds, Winston & Strawn, 1400 L Street, NW., Washington, DC 20005

NRC Project Director: Alexander W. Dromerick, Acting Director

TU Electric Company, Docket Nos. 50-445 and 50-446, Comanche Peak Steam Electric Station, Units 1 and 2, Somervell County, Texas

Date of amendment request: August 2, 1996 (TXX-96434)

Brief description of amendments: The proposed changes would increase the allowed outage time (AOT) for a centrifugal charging pump from 72 hours to 7 days.

Basis for proposed no significant hazardsconsideration determination: As required by 10 CFR 50.91(a), the licensee has provided its analysis of the issue of no significant hazards consideration, which is presented below:

1. Do the proposed changes involve a significant increase in the probability or consequences of an accident previously evaluated?

There is no effect on the probability of an event; the only potential effect is on the capability to mitigate the event. The centrifugal charging pumps are credited in the Final Safety Analysis Report Chapter 15 LOCA analysis for ECCS injection and for the containment sump recirculation mode for the design-basis LOCA. Increasing the AOT for the centrifugal charging pumps does not affect analysis assumptions regarding functioning of required equipment designed to mitigate the consequences of accidents. Further, the severity of postulated accidents and resulting radiological effluent releases will not be affected by the increased AOT.

A reliability analysis of the charging system found the change to have no significant impact on normal operation or on the RCP seal cooling function. Therefore, the change would not significantly increase in the probability of a seal LOCA.

The change potentially affects only the availability of the charging system for accident mitigation and has no effect on the ability of other ECCS systems to perform their functions. Through the use of a probabilistic risk assessment, it was determined that the proposed change would have an insignificant effect on the core damage frequency.

Therefore, the proposed change does not involve a significant increase in the probability or consequences of an accident previously evaluated.

2. Do the proposed changes create the possibility of a new or different type of accident from any accident previously evaluated?

Unavailability of one centrifugal charging pump for a finite period of time is currently allowed by the Technical Specifications. Increasing the AOT from 72 hours to 7 days would not change the method that TU Electric operates CPSES, thus would not create a new condition. Further, the proposed change would not result in any physical alteration to any plant system, and there would not be a change in the method by which any safety related system performs its function. The ECCS would still be capable of mitigating the consequences of the design-basis accident LOCA with the one centrifugal charging pump operable. No new unanalyzed accident would be created.

3. Do the proposed changes involve a significant reduction in a margin of safety?

The proposed change does not impact either the physical protective boundaries or performance of safety systems for accident mitigation. There is no safety analysis impact since the extension of the centrifugal charging pump AOT interval will have no effect on any safety limit, protection system setpoint, or limiting condition of operation. There is no hardware change that would impact existing safety analysis acceptance criteria, therefore there is no significant change in the margin of safety.

In summary, the proposed change would not have a significant impact on the margin of safety.

The NRC staff has reviewed the licensee's analysis and, based on this review, it appears that the three standards of 10 CFR 50.92(c) are satisfied. Therefore, the NRC staff proposes to determine that the amendment request involves no significant hazards consideration.

Local Public Document Room location: University of Texas at Arlington Library, Government Publications/Maps, 702 College, P.O. Box 19497, Arlington, TX 76019

Attorney for licensee: George L. Edgar, Esq., Morgan, Lewis and Bockius, 1800 M Street, N.W., Washington, DC 20036

NRC Project Director: James W. Clifford, Acting

Previously Published Notices Of Consideration Of Issuance Of Amendments To Facility Operating Licenses, Proposed No Significant Hazards Consideration Determination, And Opportunity For A Hearing

The following notices were previously published as separate individual notices. The notice content was the same as above. They were published as individual notices either because time did not allow the Commission to wait for this biweekly notice or because the

action involved exigent circumstances. They are repeated here because the biweekly notice lists all amendments issued or proposed to be issued involving no significant hazards consideration.

For details, see the individual notice in the **Federal Register** on the day and page cited. This notice does not extend the notice period of the original notice.

Detroit Edison Company, Docket No. 50-341, Fermi 2, Monroe County, Michigan

Date of amendment request: September 5, 1997 (NRC-97-0107)

Description of amendment request: The proposed amendment would add Special Test Exception 3/4.10.7, ''Inservice Leak and Hydrostatic Testing,'' that allows the performance of pressure testing at a reactor coolant temperature up to 212 °F while remaining in Operational Condition 4. This special test exception would also require that certain Operational Condition 3 specifications for Secondary Containment Isolation, Secondary Containment Integrity, Secondary Containment Automatic Isolation Dampers, and Standby Gas Treatment System operability be met. This change would also revise the Index, Table 1.2, ''Operational Conditions,'' and the Bases to incorporate the reference to the proposed special test exception. The licensee requested that this amendment be reviewed under exigent circumstances.

Date of individual notice in the **Federal Register:** September 12, 1997 (62 FR 48113)

Expiration date of individual notice: October 14, 1997 NSHC comments: September 29, 1997

Local Public Document Room location: Monroe County Library System, 3700 South Custer Road, Monroe, Michigan 48161

Attorney for licensee: John Flynn, Esq., Detroit Edison Company, 2000 Second Avenue, Detroit, Michigan 48226

NRC Project Director: John N. Hannon

Houston Lighting & Power Company, City Public Service Board of San Antonio, Central Power and Light Company, City of Austin, Texas, Docket Nos. 50-498 and 50-499, South Texas Project, Units 1 and 2, Matagorda County, Texas

Date of amendment request: August 14, 1997

Brief description of amendment request: The proposed amendments would revise the allowed tolerance of the reactor coolant system volume provided in Technical Specification 5.4.2 to account for steam generator tube plugging.

Date of individual notice in the **Federal Register:** August 26, 1997 (62 FR 45278)

Expiration date of individual notice: September 25, 1997

Local Public Document Room location: Wharton County Junior College, J. M. Hodges Learning Center, 911 Boling Highway, Wharton, TX 77488

Notice Of Issuance Of Amendments ToFacility Operating Licenses

During the period since publication of the last biweekly notice, the Commission has issued the following amendments. The Commission has determined for each of these amendments that the application complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendment.

Notice of Consideration of Issuance of Amendment to Facility Operating License, Proposed No Significant Hazards Consideration Determination, and Opportunity for A Hearing in connection with these actions was published in the **Federal Register** as indicated.

Unless otherwise indicated, the Commission has determined that these amendments satisfy the criteria for categorical exclusion in accordance with 10 CFR 51.22. Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared for these amendments. If the Commission has prepared an environmental assessment under the special circumstances provision in 10 CFR 51.12(b) and has made a determination based on that assessment, it is so indicated.

For further details with respect to the action see (1) the applications for amendment, (2) the amendment, and (3) the Commission's related letter, Safety Evaluation and/or Environmental Assessment as indicated. All of these items are available for public inspection at the Commission's Public Document Room, the Gelman Building, 2120 L Street, NW., Washington, DC, and at the local public document rooms for the particular facilities involved.

Carolina Power & Light Company, et al., Docket Nos. 50-325 and 50-324, Brunswick Steam Electric Plant, Units 1 and 2, Brunswick County, North Carolina

Date of application for amendments: January 15, 1997, as supplemented on August 22, 1997.

Brief description of amendments: The amendments revise the minimum and maximum allowed values in Technical Specification 3.6.2.1 for suppression chamber water volume. The amendments correct an error identified by Carolina Power & Light Company in the previous calculation of water volume and correct an error in the value listed in the associated TS Bases for Unit 1 for primary system operating pressure.

Date of issuance: August 28, 1997

Effective date: August 28, 1997

Amendment Nos.: 186 and 217

Facility Operating License Nos. DPR-71 and DPR-62: Amendments change the Technical Specifications

Date of initial notice in **Federal Register:** March 26, 1997 (62 FR 14458) The Commission's related evaluation of the amendments is contained in a Safety Evaluation dated August 28, 1997. No significant hazards consideration comments received: No.

Local Public Document Room location: University of North Carolina at Wilmington, William Madison Randall Library, 601 S. College Road, Wilmington, North Carolina 28403-3297

Carolina Power & Light Company, et al., Docket Nos. 50-325 and 50-324, Brunswick Steam Electric Plant, Units 1 and 2, Brunswick County, North Carolina

Date of application for amendments: December 4, 1996

Brief description of amendments: The amendments revise the approach in Technical Specification 3/4.1.2 for determining a reactivity anomaly by changing from control rod density comparison to direct comparison of reactivity status.

Date of issuance: September 5, 1997

Effective date: September 5, 1997

Amendment Nos.: 187 and 218

Facility Operating License Nos. DPR-71 and DPR-62: Amendments change the Technical Specifications

Date of initial notice in **Federal Register:** March 12, 1997 (62 FR 11484) The Commission's related evaluation of the amendments is contained in a Safety Evaluation dated September 5, 1997. No significant hazards consideration comments received: No.

Local Public Document Room location: University of North Carolina at

Wilmington, William Madison Randall Library, 601 S. College Road, Wilmington, North Carolina 28403-3297

Commonwealth Edison Company, Docket Nos. 50-237 and 50-249, Dresden Nuclear Power Station, Units 2 and 3, Grundy County, Illinois

Date of application for amendments: January 24, 1997

Brief description of amendments: The amendments revise the Technical Specification (TS) required surveillance calibration to be performed on the reactor water level instrumentation to reflect the modifications made to the Unit 3 instrumentation. The modifications were made during the recent Unit 3 refueling outage to improve the reliability of emergency core cooling system (ECCS) initiation on low low reactor water level. The surveillance requirement for calibration of the new level instrumentation is consistent with the ECCS low reactor water level initiation transmitter calibration requirements of NUREG 1433, ''Standard Technical Specifications, General Electric Plants, BWR/4'' for similar instrumentation. The same TS change for Unit 2 has been previously reviewed and approved by the NRC staff in Amendment No. 145 dated June 28, 1996. In addition minor editorial changes were made to the TS.

Date of issuance: September 10, 1997

Effective date: September 10, 1997, with full implementation within 60 days.

Amendment Nos.: 162 and 157

Facility Operating License Nos. DPR-19 and DPR-25: The amendments revised the Technical Specifications.

Date of initial notice in **Federal Register:** April 18, 1997 (62 FR 19143) The Commission's related evaluation of the amendments is contained in a Safety Evaluation dated September 10, 1997. No significant hazards consideration comments received: No.

Local Public Document Room location: Morris Area Public Library District, 604 Liberty Street, Morris, Illinois 60450

oit Edison Company, Docket No. 50-341, Fermi-2, Monroe County, Michigan

application for amendment: December 15, 1994, as revised July 25, 1996, and supplemented December 13, 1996, and June 18, 1997

Brief description of amendment: The amendment revises Technical Specification (TS) Section 6.0, Administrative Controls, by (1) removing requirements that are adequately controlled by existing regulations other than 10 CFR 50.36 and the TS and (2) relocating selected requirements from TS Section 6.0 to licensee-controlled documents or programs.

Date of issuance: September 10, 1997

Effective date: September 10, 1997, with full implementation within 90 days. Implementation of this amendment shall include the relocation of the TS requirements to the appropriate licensee-controlled documents, as described in the licensee's application dated December 15, 1994, as revised July 25, 1996, and supplemented December 13, 1996, and June 18, 1997, and evaluated in the staff's safety evaluation dated September 10, 1997.

Amendment No.: 113

Facility Operating License No. NPF-43. Amendment revises the TS.

Date of initial notice in **Federal Register:** June 6, 1995 (60 FR 29873) and August 14, 1996 (61 FR 42279). The December 13, 1996, and June 18, 1997, letters provided clarifying information within the scope of the original application and did not change the staff's initial proposed no significant hazards considerations determination. The Commission's related evaluation of the amendment is contained in a Safety Evaluation dated September 10, 1997. No significant hazards consideration comments received: No.

Local Public Document Room location: Monroe County Library System, 3700 South Custer Road, Monroe, Michigan 48161

Duquesne Light Company, et al., Docket No. 50-334, Beaver Valley Power Station, Unit No. 1, Shippingport, Pennsylvania

Date of application for amendment: March 10, 1997

Brief description of amendment: The amendment modifies the Technical Specifications (TSs) by reducing the reactor coolant system specific activity limits in accordance with the NRC's guidance provided in Generic Letter 95-05, ''Voltage-Based Repair Criteria for Westinghouse Steam Generator Tubes by Outside Diameter Stress Corrosion Cracking.'' The definition of DOSE EQUIVALENT I-131 is replaced with the Improved Standard TS definition in the first sentence and an equation is added based on dose conversion factors derived from the International Commission on Radiation Protection (ICRP) ICRP-30. TS 3.4.8, Specific Activity, is revised by reducing the DOSE EQUIVALENT I-131 limit from 1.0 micro Ci/gram to 0.35 micro Ci/gram for the 48-hour limit and from 60 micro Ci/gram to 21 micro Ci/gram for the maximum instantaneous limit. Item 4.a in TS Table 4.4-12, Primary Coolant Specific Activity Sample and Analysis Program, TS Figure 3.4-1, and the Bases for TS 3/4.4.8 are also modified to reflect the reduced DOSE EQUIVALENT I-131 limit.

Date of issuance: September 10, 1997

Effective date: As of the date of issuance, to be implemented within 60 days.

Amendment No: 205

Facility Operating License No. DPR-66. Amendment revised the Technical Specifications.

Date of initial notice in **Federal Register:** May 7, 1997 (62 FR 24985) The Commission's related evaluation of the amendment is contained in a Safety Evaluation dated September 10, 1997. No significant hazards consideration comments received: No

Local Public Document Room location: B. F. Jones Memorial Library, 663 Franklin Avenue, Aliquippa, PA 15001

Florida Power Corporation, et al., Docket No. 50-302, Crystal River Unit No. 3 Nuclear Generating Plant, Citrus County, Florida

Date of application for amendment: August 4, 1997, as supplemented August 16, 1997.

Brief description of amendment: Temporary change to Technical Specification Surveillance Requirement (SR) 3.3.8.1. The change will allow the licensee to extend the frequency of SR 3.3.8.1 from 31 to 60 days.

Date of issuance: August 29, 1997

Effective date: August 29, 1997

Amendment No.: 157

Facility Operating License No. DPR-72. Amendment temporarily revises Technical Specifications Surveillance Requirement 3.3.8.1.

Date of initial notice in **Federal Register:** August 12, 1997 (62 FR 43189) The Commission's related evaluation of the amendment is contained in a Safety Evaluation dated August 29, 1997. No significant hazards consideration comments received: No.

Local Public Document Room location: Coastal Region Library, 8619 W. Crystal Street, Crystal River, Florida 32629

Houston Lighting & Power Company, City Public Service Board of San Antonio, Central Power and Light Company, City of Austin, Texas, Docket Nos. 50-498 and 50-499, South Texas Project, Units 1 and 2, Matagorda County, Texas

Date of amendment request: May 17, 1996, as supplemented June 14, 1996, March 17, July 29, and July 30, 1997

Brief description of amendments: The amendments modify Technical

Specification Section 3/4.4.5 Steam Generators, 3/4.4.6 Reactor Coolant System Leakage, and associated Bases to allow the installation of tube sleeves as an alternative to plugging to repair defective steam generator tubes.

Date of issuance: September 4, 1997

Effective date: September 4, 1997

Amendment Nos.: Unit 1 - Amendment No. 90; Unit 2 - Amendment No. 77

Facility Operating License Nos. NPF-76 and NPF-80: The amendments revised the Technical Specifications.

Date of initial notice in **Federal Register:** May 29, 1996 (61 FR 25938) and April 9, 1997 (62 FR 17235). The June 14, 1996, and July 29, and July 30, 1997, submittals provided additional information that did not affect the staff's initial no significant hazards consideration determination. The Commission's related evaluation of the amendments is contained in a Safety Evaluation dated September 4, 1997. No significant hazards consideration comments received: No.

Local Public Document Room location: Wharton County Junior College, J. M. Hodges Learning Center, 911 Boling Highway, Wharton, TX 77488

Northeast Nuclear Energy Company, et al., Docket No. 50-423, Millstone Nuclear Power Station, Unit No. 3, New London County, Connecticut

Date of application for amendment: June 30, 1997

Brief description of amendment: Technical Specification Surveillance Requirements 4.7.1.5.1 and 4.7.1.5.2 require the periodic testing of the main steam isolation valves (MSIVs) to demonstrate operability. The amendment (1) clarifies when the MSIVs are partial stroked or full closure tested, (2) adds a note to the Mode 4 applicability of Technical Specification 3.7.1.5 to require that the MSIVs be closed and deactivated at less than 320 degrees F, (3) makes editorial changes, and (4) makes changes to the associated Bases sections.

Date of issuance: September 3, 1997

Effective date: As of the date of issuance, to be implemented within 60 days.

Amendment No.: 148

Facility Operating License No. NPF-49: Amendment revised the Technical Specifications.

Date of initial notice in **Federal Register:** July 30, 1997 (62 FR 40853) The Commission's related evaluation of the amendment is contained in a Safety Evaluation dated September 3, 1997. No significant hazards consideration comments received: No.

Local Public Document Room location: Learning Resources Center, Three Rivers Community-Technical College, 574 New London Turnpike, Norwich, Connecticut 06360, and the Waterford Library, ATTN: Vince Juliano, 49 Rope Ferry Road, Waterford, Connecticut 06385

Northeast Nuclear Energy Company, et al., Docket No. 50-423, Millstone Nuclear Power Station, Unit No. 3, New London County, Connecticut

Date of application for amendment: May 14, 1997, as supplemented by letter dated July 30, 1997

Brief description of amendment: Technical Specification Surveillance Requirement 4.8.2.1.c.4 requires that each battery charger be tested to verify that it can supply a specified current at 125 volts. The amendment increases the required test voltage.

Date of issuance: September 5, 1997

Effective date: As of the date of issuance, to be implemented within 60 days.

Amendment No.: 149

Facility Operating License No. NPF-49: Amendment revised the Technical Specifications.

Date of initial notice in **Federal Register:** June 18, 1997 (62 FR 33130) The July 30, 1997, letter provided clarifying information that did not change the scope of the May 14, 1997, application and the initial proposed no significant hazards consideration determination. The Commission's related evaluation of the amendment is contained in a Safety Evaluation dated September 5, 1997. No significant hazards consideration comments received: No.

Local Public Document Room location: Learning Resources Center, Three Rivers Community-Technical College, 574 New London Turnpike, Norwich, Connecticut 06360, and the Waterford Library, ATTN: Vince Juliano, 49 Rope Ferry Road, Waterford, Connecticut 06385

PECO Energy Company, Public Service Electric and Gas Company Delmarva Power and Light Company, and Atlantic City Electric Company, Docket Nos. 50-277 and 50-278, Peach Bottom Atomic Power Station, Unit Nos. 2 and 3, York County, Pennsylvania

Date of application for amendments: May 9, 1997, as supplemented by letter dated July 14, 1997

Brief description of amendments: The proposed change revises the Peach Bottom Atomic Power Station, Units 2 and 3, technical specifications to extend the interval for replacing the primary containment purge and exhaust valve inflatable seals.

Date of issuance: September 4, 1997

Effective date: Both units, as of date of issuance, to be implemented within 30 days.

Amendments Nos.: 220 and 223

Facility Operating License Nos. DPR-44 and DPR-56: The amendments revised the Technical Specifications.

Date of initial notice in **Federal Register:** July 2, 1997 (62 FR 35851) The supplemental letter provided clarifying information that did not change the original no significant hazards consideration determination. The Commission's related evaluation of the amendments is contained in a Safety Evaluation dated September 4, 1997. No significant hazards consideration comments received: No.

Local Public Document Room location: Government Publications Section, State Library of Pennsylvania, (REGIONAL DEPOSITORY) Education Building, Walnut Street and Commonwealth Avenue, Box 1601, Harrisburg, PA 17105

Pennsylvania Power and Light Company, Docket Nos. 50-387 and 50-388, Susquehanna Steam Electric Station, Units 1 and 2, Luzerne County, Pennsylvania

Date of application for amendments: September 25, 1996

Brief description of amendments: These amendments (1) revise the required number of operable gaseous radioactivity monitoring system channels and particulate radioactivity monitoring system channels from one in each of the monitoring systems to one in either of the monitoring systems, (2) allow both the gaseous radioactivity monitoring system and the particulate monitoring system to be inoperable for up to 30 days provided that grab samples are obtained and analyzed at least once per 12 hours, and (3) add an action for the loss of all reactor coolant system leakage detection systems (drywell floor sump level monitoring system, gaseous radioactivity monitoring system and particulate radioactivity monitoring system).

Date of issuance: September 3, 1997

Effective date: As of the date of issuance, to be implemented within 30 days of issuance.

Amendment Nos.: 168 and 142

Facility Operating License Nos. NPF-14 and NPF-22: The amendments revised the Technical Specifications.

Date of initial notice in **Federal Register:** November 19, 1996 (61 FR 58904) The Commission's related evaluation of the amendments is contained in a Safety Evaluation dated

September 3, 1997. No significant hazards consideration comments received: No.

Local Public Document Room location: Osterhout Free Library, Reference Department, 71 South Franklin Street, Wilkes-Barre, PA 18701

Public Service Electric & Gas Company, Docket Nos. 50-272 and 50-311, Salem Nuclear Generating Station, Unit Nos. 1 and 2, Salem County, New Jersey

Date of application for amendments: April 25, 1997, as supplemented June 6, 1997

Brief description of amendments: The amendments revise Technical Specification 3.5.2 to eliminate reference to the flow path from the residual heat removal system to the reactor coolant system hot legs. This flow path is being eliminated to prevent excessive flow through the residual heat removal system during all hot leg recirculation configurations assuming worst-case single failures that could result in excessive flow during hot leg recirculation following a loss-of-coolant accident.

Date of issuance: September 11, 1997

Effective date: Both units, as of the date of issuance, to be implemented within 60 days of issuance.

Amendment Nos.: 200 and 184

Facility Operating License Nos. DPR-70 and DPR-75. The amendments revised the Technical Specifications.

Date of initial notice in **Federal Register:** May 14, 1997 (62 FR 26574) The June 6, 1997, supplement provided clarifying information that did not change the initial proposed no significant hazards consideration determination. The Commission's related evaluation of the amendments is contained in a Safety Evaluation dated September 11, 1997. No significant hazards consideration comments received: No.

Local Public Document Room location: Salem Free Public Library, 112 West Broadway, Salem, NJ 08079Sacramento Municipal Utility District, Docket No. 312, Rancho Seco Nuclear Generating Station, Sacramento County, California

Date of application for amendment: December 9, 1993, as superseded December 19, 1995, and as supplemented on January 22, 1996.

Brief description of amendment: This amendment changes the Technical Specifications to incorporate the revised 10 CFR Part 20, Standards for Protection Against Radiation. The amendment corrects references from Semiannual Radioactive Effluent Release Report to Annual Radioactive Effluent Release Report. The amendment also corrects references from NRC Region V to NRC Region IV.

Date of issuance: August 22, 1997

Effective date: August 22, 1997

Amendment No.: 125

Facility Operating License No. NPF-1: The amendment revised the Technical Specifications.

Date of initial notice in **Federal Register:** March 2, 1994 (59 FR 10015) The information provided in the licensee's letters of December 19, 1995 and January 22, 1996 contained editorial changes and did not involve significant changes to the original Federal Register notice. The Commission's related evaluation of the amendment is contained in a Safety Evaluation dated August 22, 1997. No significant hazards consideration comments received: No.

Local Public Document Room location: : Central Library, Government Documents, 828 I Street, Sacramento, California 95814

Southern Nuclear Operating Company, Inc., Georgia Power Company, Oglethorpe Power Corporation, Municipal Electric Authority of Georgia, City of Dalton, Georgia, Docket Nos. 50-321 and 50-366, Edwin I. Hatch Nuclear Plant, Units 1 and 2, Appling County, Georgia Date of application for amendments: January 7, 1997, as supplemented July 2, 1997

Brief description of amendments: The amendments revise plant Technical Specifications associated with surveillance requirements testing that requires manually actuating every safety/relief valve during each unit startup from a refueling outage.

Date of issuance: September 5, 1997

Effective date: As of the date of issuance to be implemented within 30 days

Amendment Nos.: 208 and 150

Facility Operating License Nos. DPR-57 and NPF-5: Amendments revised the Technical Specifications.

Date of initial notice in **Federal Register:** January 29, 1997 (62 FR 4350) The Commission's related evaluation of the amendments is contained in a Safety Evaluation dated September 5, 1997. No significant hazards consideration comments received: No.

Local Public Document Room location: Appling County Public Library, 301 City Hall Drive, Baxley, Georgia 31513

Tennessee Valley Authority, Docket No. 50-260 Browns Ferry Nuclear Plant, Unit 2, Limestone County, Alabama

Date of application for amendment: June 2, 1995, revised March 3, 1997, as supplemented May 13 and August 20, 1997 (TS 353)

Brief description of amendment: The amendment provides technical specification (TS) changes for an upgrade of the power range neutron monitor instrumentation. Changes to thermal limits specifications were also proposed to implement average power range monitor and rod block monitor ts improvements, and maximum extended load line limit analyses.

Date of issuance: September 11, 1997

Effective Date: September 11, 1997

Amendment No.: 249

Facility Operating License No. DPR-52: Amendment revised the TS.

Date of initial notice in **Federal Register:** August 16, 1995 (60 FR 42609) The March 3, 1997 revision, as supplemented May 13 and August 20, 1997, does not affect the staff's proposed finding of no significant hazards consideration.

The Commission's related evaluation of the amendment is contained in a Safety Evaluation dated September 11, 1997. No significant hazards consideration comments received: None.

Local Public Document Room location: Athens Public library, 405 E. South Street, Athens, Alabama 35611

Tennessee Valley Authority, Docket No. 50-390 Watts Bar Nuclear Plant, Unit 1, Rhea County, Tennessee

Date of application for amendment: March 27, 1997, as supplemented May 28, June 4, and July 30, 1997.

Brief description of amendment: The amendment pertains to Cycle 2 core design changes and provides operational enhancements for reactor trip setpoints. Part 1 addresses an increase in the containment sump boron concentration during a large break loss-of-coolant accident and describes changes to Technical Specification (TS) 3.5.1 and 3.5.4 regarding boron concentration. Part 2 addresses changes to TS Figure 2.1.1-1, TS Table 3.3.1-1, and TS 3.4.1 on safety limits, the trip system and pressure, temperature and flow limits, respectively.

Date of issuance: September 11, 1997

Effective date: Sepember 11, 1997

Amendment No.: 7

Facility Operating License No. NPF-90: Amendment revises the TS.

Date of initial notice in **Federal Register:** July 2, 1997 (62 FR 35852) The July 30, 1997 submittal provided clarifying information which did not affect the initial proposed no significant hazards consideration determination.

The Commission's related evaluation of the amendment is contained in a Safety Evaluation dated September 11, 1997. No significant hazards consideration comments received: None

Local Public Document Room location: Chattanooga-Hamilton County Library, 1001 Broad Street, Chattanooga, TN 37402

The Cleveland Electric Illuminating Company, Centerior Service Company, Duquesne Light Company, Ohio Edison Company, OES Nuclear, Inc., Pennsylvania Power Company, Toledo Edison Company, Docket No. 50-440 Perry Nuclear Power Plant, Unit No. 1, Lake County, Ohio

Date of application for amendment: January 31, 1997, supplemented August 6, 1997.

Brief description of amendment: The amendment approves the use of Option B, ''Performance-Based Requirements,'' to 10 CFR Part 50, Appendix J, ''Primary Reactor Containment Leakage Testing for Water-Cooled Power Reactors.''

Date of issuance: September 9, 1997

Effective date: September 9, 1997

Amendment No.: 86

Facility Operating License No. NPF-58: This amendment revised the Technical Specifications.

Date of initial notice in **Federal Register:** March 12, 1997 (62 FR 11492). The Commission's related evaluation of the amendment is contained in a Safety Evaluation dated September 9, 1997. No significant hazards consideration comments received: No.

Local Public Document Room location: Perry Public Library, 3753 Main Street, Perry, Ohio 44081

The Cleveland Electric Illuminating Company, Centerior Service Company, Duquesne Light Company, Ohio Edison Company, OES Nuclear, Inc., Pennsylvania Power Company, Toledo Edison Company, Docket No. 50-440 Perry Nuclear Power Plant, Unit No. 1, Lake County, Ohio

Date of application for amendment: May 2, 1997

Brief description of amendment: The amendment allows the leakage rate of one or more main steam lines to be up to 35 standard cubic feet per hour (scfh), as long as the total leakage rate through all four main steam lines is less than or equal to 100 scfh.

Date of issuance: September 11, 1997

Effective date: September 11, 1997

Amendment No.: 87

Facility Operating License No. NPF-58: This amendment revised the Technical Specifications.

Date of initial notice in **Federal Register:** June 18, 1997 (62 FR 33136). The Commission's related evaluation of the amendment is contained in a Safety Evaluation dated September 11, 1997. No significant hazards consideration comments received: No.

Local Public Document Room location: Perry Public Library, 3753 Main Street, Perry, Ohio 44081

Wisconsin Electric Power Company, Docket Nos. 50-266 and 50-301, Point Beach Nuclear Plant, Unit Nos. 1 and 2, Town of Two Creeks, Manitowoc County, Wisconsin

Date of application for amendments: April 14, 1997 (TSCR 198)

Brief description of amendments: These amendments revise Technical Specification Section 15.3.1, ''Reactor Coolant System,'' to eliminate the provisions for operation of the units at below 3.5 percent rated power with a single reactor coolant pump.

Date of issuance: September 3, 1997

Effective date: September 3, 1997, with full implementation within 45 days

Amendment Nos.: 178 and 182

Facility Operating License Nos. DPR-24 and DPR-27: Amendments revised the Technical Specifications.

Date of initial notice in **Federal Register:** May 21, 1997 (62 FR 27802) The Commission's related evaluation of the amendments is contained in a Safety Evaluation dated September 3, 1997. No significant hazards consideration comments received: No.

Local Public Document Room location: The Lester Public Library, 1001 Adams Street, Two Rivers, Wisconsin 54241

Wisconsin Electric Power Company, Docket Nos. 50-266 and 50-301, Point Beach Nuclear Plant, Unit Nos. 1 and 2, Town of Two Creeks, Manitowoc County, Wisconsin

Date of application for amendments: January 24, 1997, as supplemented on May 15 and August 5, 1997 (TSCR 193)

Brief description of amendments: These amendments revise TS 15.5.4, ''Fuel Storage,'' to increase fuel assembly enrichment limits to 5.0 weight percent uranium-235 while maintaining K_{eff} in the storage pools (spent fuel pool and new fuel storage racks) less than 0.95. Date of issuance: September 4, 1997

Effective date: September 4, 1997, with full implementation within 45 days

Amendment Nos.: 179 and 183

Facility Operating License Nos. DPR-24 and DPR-27: Amendments revised the Technical Specifications.

Date of initial notice in **Federal Register:** June 4, 1997 (62 FR 30647) The August 5, 1997, submittal provided clarifying information within the scope of the original application and did not affect the staff's initial proposed no significant hazards considerations determination. The Commission's related evaluation of the amendments is contained in a Safety Evaluation dated September 4, 1997. No significant hazards consideration comments received: No.

Local Public Document Room location: The Lester Public Library, 1001 Adams Street, Two Rivers, Wisconsin 54241

Notice Of Issuance Of Amendments To Facility Operating Licenses And Final Determination Of No Significant Hazards Consideration And Opportunity For A Hearing (Exigent Public Announcement Or Emergency Circumstances)

During the period since publication of the last biweekly notice, the Commission has issued the following amendments. The Commission has determined for each of these amendments that the application for the amendment complies with the standards and requirements of the Atomic Energy Act of 1954, as amended (the Act), and the Commission's rules and regulations. The Commission has made appropriate findings as required by the Act and the Commission's rules and regulations in 10 CFR Chapter I, which are set forth in the license amendment.

Because of exigent or emergency circumstances associated with the date the amendment was needed, there was not time for the Commission to publish, for public comment before issuance, its usual 30-day Notice of Consideration of Issuance of Amendment, Proposed No Significant Hazards Consideration Determination, and Opportunity for a Hearing.

For exigent circumstances, the Commission has either issued a **Federal Register** notice providing opportunity for public comment or has used local media to provide notice to the public in the area surrounding a licensee's facility of the licensee's application and of the Commission's proposed determination of no significant hazards consideration. The Commission has provided a reasonable opportunity for the public to comment, using its best efforts to make available to the public means of communication for the public to respond quickly, and in the case of telephone comments, the comments have been recorded or transcribed as appropriate and the licensee has been informed of the public comments.

In circumstances where failure to act in a timely way would have resulted, for example, in derating or shutdown of a nuclear power plant or in prevention of either resumption of operation or of increase in power output up to the

plant's licensed power level, the Commission may not have had an opportunity to provide for public comment on its no significant hazards consideration determination. In such case, the license amendment has been issued without opportunity for comment. If there has been some time for public comment but less than 30 days, the Commission may provide an opportunity for public comment. If comments have been requested, it is so stated. In either event, the State has been consulted by telephone whenever possible.

Under its regulations, the Commission may issue and make an amendment immediately effective, notwithstanding the pendency before it of a request for a hearing from any person, in advance of the holding and completion of any required hearing, where it has determined that no significant hazards consideration is involved.

The Commission has applied the standards of 10 CFR 50.92 and has made a final determination that the amendment involves no significant hazards consideration. The basis for this determination is contained in the documents related to this action. Accordingly, the amendments have been issued and made effective as indicated.

Unless otherwise indicated, the Commission has determined that these amendments satisfy the criteria for categorical exclusion in accordance with 10 CFR 51.22. Therefore, pursuant to 10 CFR 51.22(b), no environmental impact statement or environmental assessment need be prepared for these amendments. If the Commission has prepared an environmental assessment under the special circumstances provision in 10 CFR 51.12(b) and has made a determination based on that assessment, it is so indicated.

For further details with respect to the action see (1) the application for amendment, (2) the amendment to Facility Operating License, and (3) the Commission's related letter, Safety Evaluation and/or Environmental Assessment, as indicated. All of these items are available for public inspection at the Commission's Public Document Room, the Gelman Building, 2120 L Street, NW., Washington, DC, and at the local public document room for the particular facility involved.

The Commission is also offering an opportunity for a hearing with respect to the issuance of the amendment. By October 24, 1997, the licensee may file a request for a hearing with respect to issuance of the amendment to the subject facility operating license and any person whose interest may be affected by this proceeding and who wishes to participate as a party in the proceeding must file a written request for a hearing and a petition for leave to intervene. Requests for a hearing and a petition for leave to intervene shall be filed in accordance with the Commission's ''Rules of Practice for Domestic Licensing Proceedings'' in 10 CFR Part 2. Interested persons should consult a current copy of 10 CFR 2.714 which is available at the Commission's Public Document Room, the Gelman Building, 2120 L Street, NW., Washington, DC and at the local public document room for the particular facility involved. If a request for a hearing or petition for leave to intervene is filed by the above date, the Commission or an Atomic Safety and Licensing Board, designated by the Commission or by the Chairman of the Atomic Safety and Licensing Board Panel, will rule on the request and/or petition; and the Secretary or the designated Atomic Safety and Licensing Board will issue a notice of a hearing or an appropriate order.

As required by 10 CFR 2.714, a petition for leave to intervene shall set forth with particularity the interest of the petitioner in the proceeding, and how that interest may be affected by the results of the proceeding. The petition should specifically explain the reasons why intervention should be permitted with particular reference to the following factors: (1) the nature of the petitioner's right under the Act to be made a party to the proceeding; (2) the nature and extent of the petitioner's property, financial, or other interest in the proceeding; and (3) the possible effect of any order which may be entered in the proceeding on the petitioner's interest. The petition should also identify the specific aspect(s) of the subject matter of the proceeding as to which petitioner wishes to intervene. Any person who has filed a petition for leave to intervene or who has been admitted as a party may amend the petition without requesting leave of the Board up to 15 days prior to the first prehearing conference scheduled in the proceeding, but such an amended petition must satisfy the specificity requirements described above.

Not later than 15 days prior to the first prehearing conference scheduled in the proceeding, a petitioner shall file a supplement to the petition to intervene which must include a list of the contentions which are sought to be litigated in the matter. Each contention must consist of a specific statement of the issue of law or fact to be raised or controverted. In addition, the petitioner shall provide a brief explanation of the bases of the contention and a concise statement of the alleged facts or expert opinion which support the contention and on which the petitioner intends to rely in proving the contention at the hearing. The petitioner must also provide references to those specific sources and documents of which the petitioner is aware and on which the petitioner intends to rely to establish those facts or expert opinion. Petitioner must provide sufficient information to show that a genuine dispute exists with the applicant on a material issue of law or fact. Contentions shall be limited to matters within the scope of the amendment under consideration. The contention must be one which, if proven, would entitle the petitioner to relief. A petitioner who fails to file such a supplement which satisfies these requirements with respect to at least one contention will not be permitted to participate as a party.

Those permitted to intervene become parties to the proceeding, subject to any limitations in the order granting leave to intervene, and have the opportunity to participate fully in the conduct of the hearing, including the opportunity to present evidence and cross-examine witnesses. Since the Commission has made a final determination that the amendment involves no significant hazards consideration, if a hearing is requested, it will not stay the effectiveness of the amendment. Any hearing held would take place while the amendment is in effect.

A request for a hearing or a petition for leave to intervene must be filed with the Secretary of the Commission, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, Attention: Rulemakings and Adjudications Staff or may be delivered to the Commission's Public Document Room, the Gelman Building, 2120 L Street, NW., Washington, DC, by the above date. A copy of the petition should also be sent to the Office of the General Counsel, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001, and to the attorney for the licensee.

Nontimely filings of petitions for leave to intervene, amended petitions, supplemental petitions and/or requests for a hearing will not be entertained absent a determination by the Commission, the presiding officer or the Atomic Safety and Licensing Board that the petition and/or request should be granted based upon a balancing of the factors specified in 10 CFR 2.714(a)(1)(i)-(v) and 2.714(d).

Arizona Public Service Company, et al., Docket No. STN 50-529, Palo Verde Nuclear Generating Station, Unit No. 2, Maricopa County, Arizona

Date of application for amendment: August 28, 1997, as supplemented by letter dated September 3, 1997.

Brief description of amendment: The amendment revises Technical Specification Table 4.3-2 to allow for a one-time, five-day extension of the required surveillance interval for the main steam isolation system portion of the engineered safety feature actuation system logic.

Date of issuance: September 4, 1997

Effective date: September 4, 1997

Amendment No.: 105

Facility Operating License No. NPF-51: The amendment revised the Technical Specifications. Press release issued requesting comments as to proposed no significant hazards consideration: Yes. September 1, 1997. Arizona Republic Newspaper (Arizona). Comments received: No. The Commission's related evaluation of the amendment, finding of exigent circumstances, consultation with the State of Arizona and final determination of no significant hazards consideration are contained in a Safety Evaluation dated September 4, 1997.

Local Public Document Room location: Phoenix Public Library, 1221 N. Central Avenue, Phoenix, Arizona 85004

Attorney for licensee: Nancy C. Loftin, Esq., Corporate Secretary and Counsel, Arizona Public Service Company, P.O. Box 53999, Mail Station 9068, Phoenix, Arizona 85072-3999

NRC Project Director: William H. Bateman

Public Service Electric & Gas Company, Docket No. 50-311, Salem Nuclear Generating Station, Unit No. 2, Salem County, New Jersey Date of application for amendment: August 19, 1997, as supplemented August 20, 1997.

Brief description of amendment: This amendment to the Technical Specifications increases the allowable band for control and shutdown rod demanded position versus indication position from plus or minus 12 steps to plus or minus 18 steps when the power level is not greater than 85% rated thermal power.

Date of issuance: September 10, 1997

Effective date: As of date of issuance, to be implemented within 7 days.

Amendment No. 183

Facility Operating License No. DPR-75: This amendment revised the Technical Specifications. Public comments requested as to proposed no significant hazards consideration: Yes. The NRC published a public notice of the proposed amendment, issued a proposed finding of no significant hazards consideration, and requested that any comments on the proposed no significant hazards consideration be provided to the staff by the close of business on September 3, 1997, and stated that, should circumstances change during the notice period, such that a failure to act in a timely way would result, for example, in derating or shutdown of the facility, the Commission may issue the license amendment before the expiration of the notice period, provided that its final determination is that the amendment involves no significant hazards consideration. The notice was published in the Wilmington News Journal on August 22, 1997, and in Today's Sunbeam on August 24, 1997. No public comments were received. The Commission's related evaluation of the amendment, finding of exigent circumstances, consultation with the State of New Jersey and final no significant hazards consideration determination are contained in a Safety Evaluation dated September 10, 1997.

Local Public Document Room location: Salem Free Public Library, 112 West Broadway, Salem, NJ 08079

Attorney for licensee: Jeffrie J. Keenan, Esquire, Nuclear Business Unit - N21, P.O. Box 236, Hancocks Bridge, NJ 08038

NRC Project Director: John F. Stolz

Dated at Rockville, Maryland, this 17th day of September 1997.

For the Nuclear Regulatory Commission

Elinor G. Adensam,

Acting Director, Division of Reactor Projects—III/IV, Office of Nuclear Reactor Regulation

[Doc. 97-25210 Filed 9–23–97; 8:45 am]

BILLING CODE 7590–01–F

NUCLEAR REGULATORY COMMISSION

[Docket No. 030–01786]

National Institutes of Health Issuance of Director's Decision Under 10 CFR § 2.206

Notice is hereby given that the Director, Office of Nuclear Material Safety and Safeguards, U. S. Nuclear Regulatory Commission (NRC), has acted on a Petition for action dated October 10, 1995, submitted by Maryann Wenli Ma, M.D., Ph.D., and Bill Wenling Zheng, M.D., Ph.D. (Dr. Ma and Dr. Zheng or Petitioners), as supplemented by letters dated March 25, 1996, and July 10, 1997, with regard to NRC Licensee, the National Institutes of Health (NIH or the Licensee).

Petitioners requested, pursuant to 10 C.F.R. 2.206, that NRC suspend or revoke the materials license of NIH, NRC License No. 19–00296–10, pending resolution of the issues raised by the Petition, and that NRC take other appropriate enforcement action, including the imposition of civil penalties against NIH for willful and reckless violations of 10 CFR part 20. Broadly stated, the Petitioners assert that, as the direct and proximate result of NIH's: (1) Deliberate failure to control and secure radioactive materials in violation of 10 CFR 20.1801 and 20.1802; (2) failure to maintain an effective bioassay program; and (3) failure to otherwise adhere to the requirements of 10 CFR part 20, Dr. Ma was contaminated with phosphorus-32 (P–32), resulting in both her and her unborn fetus receiving intakes of radioactive material significantly in excess of regulatory limits, additional NIH employees were also internally contaminated with P–32, and NIH failed to take proper actions to assess accurately the level of Dr. Ma's internal contamination or provide appropriate medical care and follow-up treatment.

In their March 25, 1996, supplemental Petition, Petitioners state that NIH's repeated denials that it has any problem with its security over radioactive materials suggests that the NIH radioactive materials license should be suspended or revoked, because the Licensee poses a threat to public health and safety, the Licensee has not responded adequately to other enforcement actions, and is unwilling or unable to comply with NRC requirements. On July 10, 1997, Petitioners submitted another supplement to their Petition, requesting immediate revocation or suspension of the NIH license on the grounds that NIH continues in its failure to implement and maintain a program to oversee licensed radioactive materials sufficiently secure to prevent another contamination incident of the type Dr. Ma experienced in 1995.

For the reasons stated in the ''Director's Decision Under 10 CFR 2.206,'' (DD–97–22) the Director of the Office of Nuclear Material Safety and Safeguards has granted the following requests of Petitioners in part: for enforcement action against NIH for violations of NRC security and control requirements and for violation of NRC requirements related to radiation safety training, ordering radioactive materials, inventory control of radioactive materials, monitoring, and the issuance, use, and collection of dosimetry.

Petitioners' request for NRC action to ensure adequate procedures and instructions to exposed persons for sample collection was granted as described in DD–97–22. The following requests of Petitioners for enforcement action against NIH were denied: for the exposure of Dr. Ma beyond regulatory limits, for the exposure of Dr. Ma's fetus, and for the contamination of the water cooler; regarding notification to Dr. Ma of her level of contamination; regarding Dr. Ma's declaration of pregnancy; regarding the conduct of surveys after Dr. Ma's contamination; and for the failure to accurately calculate Dr. Ma's occupational radiation dose. Finally, Petitioners' request to suspend or revoke the NIH license was denied.

The complete text of DD–97–22 follows this notice and is available for public inspection at the Commission's Public Document Room, the Gelman Building, 2120 L Street, N.W., Washington, D.C., 20003–1527 and at NRC's Region I Office located at 475 Allendale Road, King of Prussia, PA, 19406–1415.

A copy of this Decision will be filed with the Secretary of the Commission for Commission review in accordance with 10 CFR 2.206(c) of the Commission's regulations. As provided by this regulation, the Decision will constitute the final action of the Commission 25 days after issuance, unless the Commission, on its own motion, institutes a review of the Decision within that time.

Dated at Rockville, Maryland, this 17th day of September, 1997.

For the Nuclear Regulatory Commission.

Carl J. Paperiello,

Director, Office of Nuclear Material Safety and Safeguards.

Director's Decision Under 10 CFR 2.206

I. Introduction

By a Petition addressed to the Director, Office of Nuclear Material Safety and Safeguards (NMSS), dated October 10, 1995, Maryann Wenli Ma, M.D., Ph.D., and Bill Wenling Zheng, M.D., Ph.D. (Dr. Ma and Dr. Zheng or Petitioners) requested that the Nuclear Regulatory Commission (NRC) take action with respect to the National Institutes of Health (NIH or the Licensee).

Petitioners request that NRC suspend or revoke the materials license of NIH, NRC License No. 19–00296–10, pending resolution of the issues raised by the Petition, and that NRC take other appropriate enforcement action, including the imposition of civil penalties against NIH for willful and reckless violations of 10 CFR part 20.

As a basis for their requests, the Petitioners assert that NIH has willfully and recklessly committed numerous violations of 10 CFR part 20. Broadly stated, the Petitioners assert that, as the direct and proximate result of NIH's: (1) Deliberate failure to control and secure radioactive materials in violation of 10 CFR § 20.1801 and 20.1802; (2) failure to maintain an effective bioassay program; and (3) failure to otherwise adhere to the requirements of 10 CFR part 20; Dr. Ma was contaminated with phosphorus-32 (P–32), resulting in both her and her unborn fetus receiving intakes of radioactive material significantly in excess of regulatory limits, additional NIH employees were also internally contaminated with P–32, and failure of NIH to take proper actions to assess accurately the level of Dr. Ma's internal contamination or provide appropriate medical care and follow-up treatment. A more detailed description of the concerns raised by Petitioners appears in Section III., below.

By letter dated October 30, 1995, Carl J. Paperiello, Director, NMSS, acknowledged receipt of the Petition and denied Petitioners' request for immediate suspension or revocation of the NIH license because, although certain weaknesses had been identified in the 1995 inspections of NIH, these weaknesses were not sufficiently widespread or egregious as to warrant suspension or revocation of the license.

On November 2, 1995, NRC issued a Demand for Information (EA 95–240) to NIH, requesting that NIH respond to the concerns raised in the Petition. On December 11, 1995, NIH submitted its ''Response to Demand for Information (EA–95–240).'' John N. Weinstein, M.D., Ph.D. (Dr. Weinstein), submitted a response to the Petition dated December 15, 1995.

On March 25, 1996, Petitioners supplemented their Petition in a written reply to the Licensee's December 11, 1995, ''Response to Demand for Information (EA–95–240).'' In their supplemental Petition, Petitioners contend that NIH's repeated denials that it has any problem with its security over radioactive materials suggest that the NIH radioactive materials license should be suspended or revoked, because the Licensee poses a threat to public health and safety, the Licensee has not responded adequately to other enforcement actions, and is unwilling or unable to comply with NRC requirements. On July 10, 1997, Petitioners submitted another supplement to their Petition, requesting immediate revocation or suspension of the NIH license on the grounds that NIH continues in its failure to implement and maintain a program to oversee licensed radioactive materials sufficiently securely to prevent another contamination incident of the type Dr. Ma experienced in 1995. By letter dated August 5, 1997, the supplemental Petition was acknowledged and the request for immediate action was denied because NIH has made continuing progress in improving the security and control of licensed radioactive material since the 1995 contamination event. By letter dated September 10, 1997, NIH responded to the July 10, 1997, supplement to the Petition.

II. Background

NRC license No. 19–00296–10 is a broad-scope license that authorizes possession and use of radioactive material for medical diagnosis, therapy, and research in humans, as well as non-human research and development, at facilities in Bethesda, Rockville, Baltimore, and Poolesville, Maryland. The NIH main campus in Bethesda has 21 buildings housing nearly 3000 biomedical research laboratories. There are more than 800 Authorized Users and more than 5000 supervised users of radioactive material under NIH's licensed program. NIH's Materials License No. 19–00296–10, originally issued on December 7, 1956, was renewed on June 16, 1997, and will expire on June 30, 2002.

The internal contamination of Dr. Ma was discovered by Dr. Zheng (Dr. Ma's husband) during a survey of the NIH laboratory in which they both worked, on the evening of June 29, 1995. At 5:58 p.m., Dr. Zheng reported the internal contamination of his wife to the NIH emergency number, and then to their immediate supervisor, Dr. Weinstein, who was on the premises at the time. Dr. Weinstein notified the NIH Radiation Safety Branch of Dr. Ma's contamination.

Shortly after 6:00 p.m., an NIH ambulance with two emergency medical technicians responded to the scene, and at approximately 6:40 p.m., two personnel from the NIH Radiation Safety Branch (RSB) responded to the scene. Petitioners told RSB personnel that they believed Dr. Ma had been internally contaminated as a result of eating leftovers she had stored in a conference room refrigerator. The RSB performed surveys with portable radiation detection instruments to determine whether radioactive contamination was present in the laboratory, the adjacent hallways and corridors, and in the conference room. The RSB took smears of Dr. Ma's hands,

neck and face to determine if any of the contamination was removable and then had Dr. Ma change out of her clothes into clean scrubs to see if her clothing was radioactive. None of the smears, clothing, or surveys of Dr. Ma showed external contamination. The RSB asked Dr. Ma to submit a urine sample. The sample was surveyed by the RSB and found to contain radioactivity (later determined to be P–32), indicating that Dr. Ma's contamination was internal. Shortly after 8:00 p.m., the NIH ambulance departed with Dr. Ma en route to Holy Cross Hospital (Holy Cross).

NIH RSB staff contacted the on-call physician from the Radiation Emergency Assistance Center/Training Site (REAC/TS) [1] in Oak Ridge, Tennessee, and had the REAC/TS physician speak directly with the emergency room (ER) physician at Holy Cross. The REAC/TS physician stated that he discussed with the Holy Cross ER physician the possibility of administering a phosphate solution for dilution and displacement of the P–32, but that the ER physician choose not to follow this suggestion. The REAC/TS physician also advised the ER physician of the need to collect 24-hour urine samples for determination of Dr. Ma's occupational radiation dose. After consultation with REAC/TS and the NIH Radiation Safety Officer (RSO), the Holy Cross ER physician ordered intravenous infusions of fluids (hydration) in order to dilute Dr. Ma's internal contamination.

The Petitioners did not return to work in the NIH Laboratory of Molecular Pharmacology after the discovery of Dr. Ma's contamination, but eventually returned to work at other laboratories at NIH.

On June 30, 1995, NIH informed an NRC inspector on site at the time that Dr. Ma had been internally contaminated with P–32. On June 30, 1995, NRC initiated an Augmented Inspection Team (AIT) evaluation of the event and presented its preliminary findings to NIH on August 8, 1995. During October 23–24, 1995, and November 6–10, 1995, the NRC staff conducted two special team inspections of NIH. On December 21, 1995, NRC Inspection Report No. 030–01786/95–203 was issued describing the results of those inspections. The AIT issued a redacted version of its report on January 29, 1996, and, upon completion of NRC's investigation, issued the full, unredacted report on January 13, 1997. NRC's Office of Investigations (OI) began an investigation on June 30, 1995. Additionally, the Federal Bureau of Investigation began an investigation, as did the Department of Health and Human Services Office of the Inspector General, and the NIH Police Department. These investigative groups worked in cooperation with each other and shared their findings on an ongoing basis. On January 24, 1997, NRC's OI issued its report, ''National Institutes of Health: Wrongful Administration of P–32, Case No. 1–95–033.'' That report and its associated exhibits are being publicly released concurrent with issuance of this Director's Decision.

NIH performed an assessment of Dr. Ma's intake of P–32, the resultant radiation exposure received by Dr. Ma, and the radiation exposure received by her fetus. In its initial notification to NRC on July 3, 1995, NIH indicated that its estimated ingestion for Dr. Ma was approximately 300 microcuries (μCi) or 11.1 megabequerel (MBq) of P–32.[2] On August 29, 1995, NIH reassessed Dr. Ma's dose and calculated her effective dose equivalent to be 4.17 rem [41.7 millisievert (mSv)], based upon an intake of 500 μCi (18.5 MBq), and the dose to her fetus to be 3.2 rem (32 mSv). Most recently, on July 30, 1996, NIH revised its committed effective dose equivalent (CEDE) estimates for Dr. Ma to between 4.7 and 7.0 rem (47 and 70 mSv), corresponding to an intake range of between 570 and 840 μCi (21.1 and 31.1 MBq). The revised dose to the fetus was between 3.7 and 5.4 rem (37 and 54 mSv). Additional discussion of NIH's dose estimates appears in Section III.K., below.

NRC's estimates indicate that Dr. Ma ingested between 30.3 and 48.1 MBq (820 and 1300 μCi) of P–32. Based on these values, Dr. Ma's estimated internal CEDE was between 80 and 127 mSv (8.0 and 12.7 rem). The annual occupational exposure limit applicable to Dr. Ma was, however, 5 mSv (5 rem) total effective dose equivalent per 10 CFR § 20.1201(a)(1)(i). The estimated dose received by Dr. Ma's fetus was between 51 and 81 mSv (5.1 and 8.1 rem).

NRC estimated that of the 26 other NIH employees who received P–32 contamination from a water cooler situated in a hallway near the Petitioner's laboratory, including Dr. Zheng, one individual who was not an occupational radiation worker received a dose of between 1.5 and 2.5 mSv (150 and 250 millirem), in excess of the applicable dose limit of 1.0 mSv (100 millirem) for members of the public specified by 10 CFR § 20.1301.

NRC issued a series of Confirmatory Action Letters (CALs) to NIH between July 21, 1995, and June 7, 1996, addressing various measures to be taken by NIH, such as: (1) Reduction of the possibility of further ingestion of radioactive material by NIH employees; (2) determination of the full scope of the personnel contaminations at NIH; (3) further enhancement and training of NIH staff regarding security of radioactive material; (4) documentation of corrective actions with respect to enforcement of a new NIH security policy; (5) modifications to the surveillance plan for NIH laboratories; and (6) other specific actions for inspections for NRC compliance.[3]

NRC continued its onsite inspection through July 28, 1995. The AIT conducted a technical debrief with NIH RSB management and staff on August 3, 1995, and with NIH senior management on August 8, 1995. Further NRC inspection activities, including assessment of radiation dose to the exposed individuals, and evaluation of a third-party independent dose assessment, continued through November 15, 1995.

On August 23, 1996, NRC issued a Notice of Violation (NOV) and Proposed Imposition of Civil Penalty of $2500 (EA 96–027) to NIH for failure to physically secure licensed material or maintain surveillance over it to prevent unauthorized removal. Other violations of NRC requirements were also cited, involving: (1) Workers not wearing extremity dosimetry, or returning dosimetry promptly each month, as required; (2) users obtaining radioactive materials without providing required information regarding the identity of the intended user(s) or the signature of the authorized investigator; (3) researchers performing licensed activities without first receiving the required training; and (4) failure to perform thyroid bioassay measurements of researchers who handled gigabequerel [millicurie (mCi)] quantities of volatile iodine-125. On May 20, 1997, NRC issued an Order Imposing Civil Monetary Penalty in the

[1] REAC/TS is a Department of Energy response asset that maintains a radiological emergency response team consisting of physicians, nurses, health physicists and other support personnel. It is on 24-hour call to provide first-line responders with consultative or direct medical and radiological assistance at the REAC/TS facility, accident site, or attending hospital.

[2] Because the system of units employed by NIH and the Petitioner's Consultant were non-metric, the English unit is listed first, followed by its metric equivalent in brackets. However, for those instances where NRC has issued a report, metric units are listed first as primary units, followed by the English units in brackets, which is the usual NRC style.

[3] CAL 1–95–011 (July 21, 1995); CAL 1–95–011, Rev. 1 (July 21, 1995); CAL 1–95–018 (October 27, 1995); CAL 1–95–018, Supplement 1 (November 8, 1995); CAL 1–95–018, Supplement 2 (December 1, 1995); and CAL 1–95–018, Supplement 3 (June 7, 1996).

amount of $2500 (EA 96–027), which NIH paid on June 6, 1997.

III. Discussion

A. Violations of NRC Requirements for Security and Control of Licensed Material

Petitioners assert that, as the direct and proximate result of NIH's deliberate failure to control and secure radioactive materials in violation of 10 CFR §§ 20.1801 and 20.1802, and to otherwise adhere to the requirements of 10 CFR part 20, Dr. Ma was contaminated with P–32, resulting in both her and her unborn fetus receiving an intake of radioactive material in excess of regulatory limits. In addition, Petitioners state that 26 other NIH employees, including Dr. Zheng, were also internally contaminated with P–32.

Petitioners state that NIH has been unwilling to comply with NRC safety requirements in accordance with 10 CFR part 20. Specifically, Petitioners state that during the summer of 1994, NIH officials deliberately failed to lock up radioactive material as part of an experiment with a liberalized policy concerning security and use of radioactive materials, which effectively excused laboratories from locking up radioactive materials, in violation of 10 CFR § 20.1801. NIH requested a license amendment on October 31, 1994, to establish and permanently implement a previously submitted ''Interim Security Policy,'' and an exemption from the requirements to secure (under lock and key), or maintain constant surveillance of, licensed radioactive materials not in excess of 10 times the activity listed in Appendix C to 10 CFR part 20, on a per-container basis. Petitioners state that the resultant breakdown in security led to the issuance of CAL 1–95–018, on October 27, 1995, which required NIH to take immediate steps to secure radioactive materials. Petitioners state that NIH objected to complying with security regulations, and did not withdraw its application for an exemption from the security requirements until after the contamination of Petitioners.

Petitioners state that NRC's repeated discovery of unsecured radioactive materials and of absence of security controls in several NIH laboratories indicates a systemic failure of security rather than an isolated problem, and that NIH's lax control and security of radioactive materials created an environment where acts such as the deliberate contamination of Dr. Ma were bound to occur, given that the means to commit such an offense were readily available. Petitioners state that security over radioactive materials used in the Petitioners' laboratory was nonexistent. Specifically, the refrigerator and freezer used to store radioactive reagents were not locked, the lab was frequently left unattended during non-working hours, and there were no procedures to document individuals' access to the refrigerator or freezer, or to check to see if records were kept regarding the documented use of radioactive materials in that laboratory.

Petitioners state that despite NIH's reckless disregard of NRC requirements, since 1986 NRC has taken no enforcement action against NIH or the National Cancer Institute (NCI)[4] for repeated violations of 10 CFR. Part 20 regulations related to security and control of radioactive material, occupational exposure, notification of exposure, incineration, surveys, monitoring, and dosimetry.

Contrary to the assertions in the Petition, since 1986, and before the June 1995 contamination incident, NRC had taken enforcement action against NIH for violations of NRC requirements concerning security and control of radioactive materials, occupational overexposures, surveys, monitoring and dosimetry.[5] Although many of these enforcement actions involved Notices of Violation for SL IV violations and no civil penalty, they still constitute enforcement action taken by NRC.[6]

The requirements of 10 CFR 20.1801 and 20.1802 to secure and control licensed material are absolute in that the rules specify no radioactivity thresholds. NIH established a threshold amount for the security of radioactive materials located in laboratories based on 10 CFR part 20, Appendix C, quantities and NUREG/CR–6204, ''Questions and Answers Based on Revised 10 CFR part 20'' (January 1994). The answer to Question 129 indicates, in part, that the security requirements described in 10 CFR 20.1801 and 20.1802 will not be enforced for quantities of radioactive material described in 10 CFR part 20, Appendix C, which are exempt from labeling by 10 CFR 20.1905(a). By an amendment request dated October 31, 1994, NIH asked for permission to store up to ten times Appendix C quantities of radioactive material per container in posted radioactive material use areas without the requirement for direct oversight or lock and key. In March 1995, NIH requested an exemption from the requirements of 10 CFR 20.1801 and 20.1802 to store less than Appendix C quantities in unlocked (and unattended) refrigerators or freezers in corridors. NRC approved the NIH request in June 1995 because these quantities did not require labeling.[7] In response to the event of June 1995, NIH revised its security policy for

[4] NIH and NCI are two different licensees. Science Applications International Corp. holds NRC broadscope license for activities at the NCI-Frederick Cancer Research and Development Center facility located at Fort Dietrick in Frederick, MD (NRC License No. 19–21091–0). Prior to March 1995, the license was held by Program Resources Incorporated (PRI). Since 1985, NRC has issued to PRI six NOVs associated with either cited severity level (SL) IV violations or a monetary civil penalty: (1) During a February 1995 inspection, three SL IV violations were cited for inadequate surveys for P–32 personnel contamination, failure to perform thyroid bioassays, and failure to perform proper package surveys; (2) during a January 1993 inspection, two SL IV violations were cited for failure to wipe test packages and perform thyroid bioassays; (3) during a February 1991 inspection, one SL IV violation was cited for failure to perform package surveys; (4) during a January 1989 inspection, one SL IV was cited for failure to perform survey instrument calibration; (5) a $2500 Civil Penalty was issued on February 27, 1987, for an SL III violation from an inspection performed earlier that month; and (6) a December 1986 inspection resulted in five violations being cited for extremity overexposure, inadequate training, improper transfer and disposal of radioactive material, and exceedance of the license possession limits.

[5] (1) The June 11–13, 1990, inspection resulted in an NOV categorized at an SL IV, for failure to obtain specific user estimates of solid radwaste generation, as well as other non-cited violations for loss of radioactive material that was licensee-identified (Report No. 90–001). (2) The July 8–12, 1991, inspection resulted in an NOV categorized at an SL IV for failure to secure radioactive material (Report No. 91–001). (3) The July 20–24, 1992, inspection identified as inadequate dose assessment for a lutetium-177 contamination incident, and resulted in an NOV characterized as an SL IV (Report No. 92–001). (4) The January 13, 1993, inspection resulted in an escalated enforcement action (EA 93–009) categorized at two SL IVS and one SL III for failure to survey after use of radioactive material, a failure to supply dosimetry for a P–32 worker, and a P–32 contamination extremity overexposure, respectively (Report No. 93–001). (5) The April and May 1994 inspection, resulted in enforcement action (EA 94–123) categorized as two SL IVS for failure to secure, as well as a failure to survey, after using radioactive material (Report No. 94–001). The security violations from the April-May 1994 inspection also resulted in the issuance of a CAL on May 5, 1994. On July 12, 1994, an additional security violation resulted in the loss of a package containing 2.6 MBq (70 μCi) of iodine-125. The 1994 security violations were discussed at an enforcement conference held with the Licensee on July 27, 1994, and subsequently were cited as an SL IV in an NOV issued to NIH on August 16, 1994. (6) During the April and May 1994 inspections, an apparent violation was identified for incinerator operations (Report No. 94–001). On August 10, 1994, however, NIH informed NRC that it had permanently discontinued incineration operations at NIH in May 1994. Consequently, no enforcement action regarding incineration was taken.

[6] *See* ''General Statement of Policy and Procedures for NRC Enforcement Actions,'' 10 C.F.R. Part 2, Appendix C (1986–1995) and NUREG–1600, ''General Statement of Policy and Procedures for NRC Enforcement Actions'' (July 1995), Section VI.

[7] See NMSS Technical Assistance Request dated June 19, 1995, from L. Camper, NRC Headquarters to R. Bellamy, NRC Region I.

radioactive materials to require that all licensed material must be in locked storage, or in a locked room, if otherwise unattended, effective October 26, 1995. On January 19, 1996, NIH submitted a license amendment to, among other things, permit licensed material that is exempt from the labeling requirements of 10 CFR 20.1905(a) to be exempted from the revised October 26, 1995, NIH security policy. NRC renewed the NIH license on June 13, 1997, but did not authorize any exemptions to the security and control requirements of 10 CFR 20.1801 and 20.1802.

Petitioners are correct in stating that there have been security and control problems at NIH that required amelioration. In particular, the failure to secure refrigerators and freezers used to store radioactive reagents, and the failure to secure or maintain surveillance over laboratories, formed the basis for a series of NRC enforcement actions. Several CALs were issued to address security and control of radioactive material after the June 1995 contamination of Dr. Ma.[8] On August 23, 1996, NRC issued a NOV and Proposed Imposition of Civil Penalty of $2500 (EA 96–027) to NIH for failure to physically secure licensed material or maintain surveillance over it to prevent unauthorized removal. On May 20, 1997, NRC issued an Order Imposing Civil Monetary Penalty in the amount of $2500 (EA 96–027), which NIH paid on June 6, 1997. Based on the inspections and the investigation, the NRC staff does not conclude that these violations were willful, contrary to the assertions of Petitioners. Moreover, although the AIT Report stated that the Licensee's violations of NRC security and control requirements could have been a contributing factor, after review of the various inspection and investigative results, the NRC staff concludes that the violations of NRC security and control requirements did not contribute to the internal contamination of Dr. Ma, her fetus, or the other 26 NIH employees, including Dr. Zheng.

Since the 1995 contamination event at NIH, NRC performed several inspections of NIH. Additionally, over this period, NIH performed 90,857 laboratory audits. The most recent NRC inspection report in July 1997 found that NIH has made continuing and significant progress in improving the security and control of licensed radioactive material since the 1995 contamination event. For example, the average rate of noncompliance with NRC security and control requirements has declined to 0.25 percent of laboratories surveyed, from an average rate of 0.57 percent since the last NRC inspection of September 1996. *See* NRC Inspection Report No. 030-01786/97–001 (July 29, 1997). Additional enforcement action for security and control violations is not warranted.

In view of the above, Petitioners presented valid concerns regarding security and control of licensed material at NIH, and their request for enforcement action with respect to violations of NRC security and control requirements was granted in part as described above.

B. Dosimetry, Radiation Safety Training, and Ordering Radioactive Materials

Petitioners state that Dr. Weinstein, the Senior Investigator in the Laboratory of Molecular Pharmacology and the former supervisor of Petitioners, insisted that the Petitioners begin working with radioactive materials before they were given radiation safety training and, on two occasions, directed the Petitioners to use Dr. Weinstein's and another Authorized User's identification number to order radioactive material before Petitioners were assigned their own identification numbers. Petitioners state that the AIT found that during the first 3 months of their research, the Petitioners were given radioactive materials that had been ordered by a researcher who had since left NIH, which was not reported by the Authorized User, Dr. Weinstein, as required on NIH Form 88–1; and that in November 1994, Petitioners were using phosphorus-33 (P–33), a low-energy beta-emitting isotope requiring whole body dosimetry (or whole body badges) during its use, but that Petitioners had not been trained to use radioactive material. In addition, Petitioners state that an NRC interview of a former researcher revealed that she had ordered radioactive materials for herself and shared them with other researchers, although these users were not listed on NIH's Form 88–1.[9]

NIH worker training, use of identification numbers for procurement of licensed materials with NIH Form 88–1, and dosimetry issuance and collection, were reviewed during the October 23–24 and November 6–10, 1995, NRC inspections. As a result of those inspections, NRC cited NIH for several violations. Specifically, the Licensee was cited for allowing users to order radioactive materials electronically between October 3 and November 20, 1995, without the signature of the authorized investigator. This violation was cited as a SL IV (EA 96–027). Additionally, NIH was cited for permitting the use of sulfur-35, P–32, and P–33 by two researchers in October 1994, before providing the researchers with the training course entitled, ''Radiation Safety in the Laboratory,'' on November 29, 1994. This violation was also cited as an SL IV (EA–96–027). NIH was not cited for Petitioners' use of P–33 without the use of whole body dosimetry because neither the NIH License nor NRC regulations require such dosimetry for low-dose material. *See* Section III.C. and n. 12, below. NIH was cited, however, for violations of license requirements to use extremity dosimetry when using more than 185 MBq (0.5 mCi) of P–32 (EA 96–027).

Accordingly, Petitioners' request for enforcement action against NIH for violations of dosimetry, training, and ordering radioactive materials requirements was granted in part as described above.

C. NIH Routine Monitoring of, and Dosimetry for, Petitioners

Petitioners state that Dr. Ma was internally contaminated, in part as a result of NIH's failure to document Dr. Ma's exposure history at NIH, and failed to properly assess Dr. Ma's internal radiation doses, in violation of 10 CFR §§ 20.1202, 20.1204, 20.1501, and 20.1502. Petitioners state that NIH did not routinely monitor Petitioners' exposure to radiation and radioactive material through use of an appropriate dosimetry program. Specifically, the dosimetry given to Petitioners when they first arrived at NIH was never collected or analyzed, no dosimetry was assigned to them at the time of Dr. Ma's contamination, and as a result

[8] On July 21, 1995, CAL 1–95–011 was issued, which described the actions that NIH would take to reduce the possibility of further ingestion of radioactive material and to determine that the full scope of the personnel contaminations was known. On July 21, 1995, CAL 1–95–011, Revision 1, was issued to clarify certain points in the first CAL. On October 27, 1995, NRC issued CAL 1–95–018, which described the actions that NIH would take following an NRC special inspection on October 23 and 24, 1995, to further enhance and train NIH staff regarding security of radioactive material. On November 8, 1995, NRC issued CAL 1–95–018, Supplement 1, to further document the corrective actions that NIH took with respect to enforcement of the new NIH security policy, modifications to the surveillance plan for NIH laboratories, and other specific actions for inspections for NRC compliance. On December 1, 1995, NRC issued CAL 1–95–018, Supplement 2, to adjust each deadline within CAL 1–95–018 and its supplement. This supplement described the ongoing upgrades, to the radioactive material security program, that required that any posted room or area which contained radioactive materials in use, radioactive waste, or radioactive materials in unsecured storage, would be required to be locked when unoccupied. On June 7, 1996, NRC issued CAL 1–95–018, Supplement 3, to further clarify issues with regard to security and control of licensed radioactive material in building corridors and laboratory freezers at NIH.

[9] These facts do not constitute a violation of NRC regulations or the NIH license.

Petitioners were not wearing dosimetry at the time of Dr. Ma's contamination. Petitioners state that in November 1994, Petitioners were using P–33, a beta-emitting isotope requiring whole body dosimetry during its use, but Petitioners were not wearing required dosimetry, and Petitioners had never been issued dosimetry by Dr. Weinstein although they used P–32 in December 1994, and until March 1995.

NIH was not required to routinely monitor Petitioners' occupational exposure to radiation, or to document their occupational exposure history. 10 CFR § 20.2106(a), ''Records of Individual Monitoring Results,'' provides, in part, that ''Each licensee shall maintain records of doses received by all individuals for whom monitoring was required pursuant to § 20.1502 * * *.'' (Emphasis added) 10 CFR § 20.1502(a) provides that ''Each licensee shall monitor occupational exposure to radiation and shall supply and require the use of individual monitoring devices by—(1) Adults likely to receive, in 1 year from sources external to the body, a dose in excess of 10 percent of the limits in § 20.1201(a).'' (Emphasis added) Based on NRC's review of information maintained by NIH for the past 10 years regarding occupational exposures at NIH, it is evident that it is not likely that any NIH user of NRC-licensed radioactive materials would exceed 10 percent of the applicable occupational standard in 10 CFR § 20.1201.[10]

Accordingly, issuance of personnel dosimetry monitoring, although done by NIH as a prudent measure in operating its Radiation Safety Program, was not required by 10 CFR § 20.1502. Since monitoring of Petitioners was not required, the recording requirements of 10 CFR § 20.2106 were not applicable to Petitioners.[11]

Condition 29 of the NIH License required the use of extremity (wrist or finger) monitors by occupational workers using P–32 in quantities greater than 0.5 mCi (185 MBq), but did not require the use of whole-body dosimetry by persons using P–32 or P–33.[12] Based on a review of the Petitioner's laboratory notebooks, it appears that Dr. Ma did not use P–32. Additionally, Dr. Ma states that she advised her obstetrician that she had previously been working with low dosage material (P–33) and, upon learning of her pregnancy, stopped handling radioactive isotopes altogether. Nonetheless, NIH internal documents demonstrate that NIH provided whole body dosimetry to Petitioners on October 28, 1994.[13] Although Petitioners' laboratory notebooks indicate that Dr. Zheng used P–32 on October 17, 1994, 11 days before receipt of a whole body dosimeter, this was not a violation of NIH License Condition 29. Moreover, because Petitioners never worked with more than 185 MBq (0.5 mCi) of P–32, they were not required to wear extremity dosimetry. Additionally, since the monitoring required by License Condition 29 is not required pursuant to 10 CFR § 10.1502, the results of that monitoring would not be subject to NRC dose recording requirements, contrary to the Petitioners' assertion. See n. 11, *supra.*

NRC conducted two special team inspections on October 23–24, 1995, and November 6–10, 1995, in which NIH personnel dosimetry issuance and collection were evaluated. Although review of exposure records during this inspection indicated that occupational doses to individuals from exposure to licensed materials were well below NRC limits, NIH was cited for one SL IV violation involving the failure to issue, wear, and return, individual monitoring devices (EA 96–027).

Accordingly, Petitioners' request for enforcement action against NIH for violations of monitoring and dosimetry requirements was granted, in part, as described above.

D. Inventory Control of Radioactive Materials

Petitioners assert that NIH exercised poor inventory control of radioactive materials. Specifically, if NIH had accurately monitored the use and disposal of radioactive materials, particularly P–32, it might be possible to ascertain who had ordered, but not used, the requisite amounts of P–32 within the timeframe of Petitioners' contamination, and possibly assist law enforcement officials to ascertain who contaminated Petitioners. Petitioners relied on the findings of the AIT that: (1) The accuracy of inventory records is questionable because researchers only estimate the amount of material removed from each vial, radioactive decay is rarely accounted for, and if the vial is not emptied (because the expiration date has passed), the users do not check the balance before disposal; and (2) the computerized inventory system NIH used to replace Form 88–1 does not comply with the NIH license because the electronic document does not include the signature of the Authorized User, and has no mechanism to reasonably verify that an Authorized User had placed an order for radioactive materials and had received those materials.

NIH places ultimate responsibility for the proper use of radioactive material on the Authorized User who orders the material. Authorized Users are permitted by NIH policy to order and share radioactive material with other users, and a Supervised User may work under more than one Authorized User. If an Authorized User wishes to transfer responsibility for material ordered under her/his authorization, an NIH 88–1 form must be completed transferring responsibility to another Authorized User. The RSO stated that routine laboratory audits include checks to see who is using radioactive material and that unauthorized use is dealt with severely.

NIH License Condition 29 makes Authorized Users responsible for maintaining a record of the receipt, use, and disposal of radioactive materials under their authorization by use of Form NIH–88–16, ''Isotope Receipt, Utilization, and Disposal Record'' or equivalent. In addition, the RSO, in a memorandum dated October 3, 1995, reminded Authorized Users that transfers among other Authorized Users must be documented by completion of the same form and submittal of the form to the RSB before the transfer. During NRC inspections conducted October 23–24 and November 6–10, 1995, the inspectors were informed, during discussions with Authorized Users and RSB staff, that each shipment of radioactive material delivered has normally been accompanied by Form NIH 88–1. Authorized Users stated that they knew that they were required to

[10] In addition, during 1995, 6374 individuals at NIH were issued monitoring devices. Only one individual (other than Dr. Ma) using NRC licensed materials exceeded 10 percent of the applicable occupational external dose standard [the total deep dose equivalent to this individual was reported as 550 millirem (5.5 mSv)].

[11] In addition, Regulatory Guide 8.34, ''Monitoring Criteria and Methods to Calculate Occupational Radiation Doses'' addresses the applicability of the dose recording requirements when monitoring is not required. Regulatory Guide 8.34, paragraph 1.4 states that ''While the results of required monitoring are subject to the dose recording requirements of § 20.2106, the results of monitoring provided when not required by § 20.1502 are not subject to the dose recording requirements.''

[12] License Condition 29 requires conduct of the NIH program in accordance with the NIH license application dated July 28, 1986. Attachment 10–D of the July 28, 1986, application states that persons using or in close proximity to persons using gamma emitters, P–32, or radiation-producing machines ''* * * should wear body film badges.'' This is a recommendation, not a requirement, regarding whole-body dosimetry for only P–32. P–33 usage does not require any dosimetry. In addition, Attachment 10–D states that the ''* * * license requires extremity monitors for P–32>0.5 mCi.'' *See* p. 35.

[13] NIH ''Response to Apparent Violations in Inspection Report Nos. 030–01786/95–002 (Redacted) and 030–01786/95–203'' (May 23, 1996), Exhibit AIT–AV2–1.

keep records of the material currently on hand after loss by decay or disposal of material, and all those interviewed used the Form NIH 88–1. The inspectors did not identify any instances in which the inventory was not being kept current.

Regarding the Petitioner's concern about the accuracy of inventory records, NIH has recognized a need to review its radioactive material accountability portion of the Radiation Safety Program. Accordingly, the NIH RSO directed a complete and thorough physical inventory for radioactive materials during the latter half of 1996.[14] As of June 23, 1997, this inventory was completed, and now serves as the baseline for an on-line, real-time tracking of all radioactive materials within the RSB's centralized database system. Each Authorized User receives a complete inventory of his/her materials from the centralized database each month and is requested by the RSB to adjust records consistent with his/her use and disposal of radioactive materials.

For the NIH Authorized User to track the use of individual items of NRC-licensed materials, a new computer-generated inventory and disposal form was developed and is currently in use at NIH. This system permits Authorized Users to make changes in users, if required, and to report disposal and other inventory changes to RSB for update in the centralized database. This system, not present before 1996, substantially enhances NIH's accountability for radioactive material. Increased accountability has received NIH senior management attention and is considered by NRC staff to be a potential deterrent to the use of licensed radioactive materials for unauthorized purposes.

Initial use of the computerized inventory system, however, involved violation of NRC requirements. NIH License Condition 29 requires that the radiation safety identification number and name of all persons who will use the radioactive material, the name and signature of the Authorized User, be entered on form NIH 88–1.[15] Between October 3 and November 20, 1995, however, the licensee allowed users to order radioactive materials electronically, without the signature of the Authorized User. In addition, an NIH 88–1, submitted for order and use of radioactive materials received on September 9, 1994, did not include the radiation safety identification number and name of all persons who would use the radioactive material. NIH was cited for these irregularities as an SL IV violation (EA 96–027).

Accordingly, Petitioners' request for enforcement action against NIH for poor inventory control of radioactive materials was granted in part as described above.

E. Timeliness of NIH Emergency Personnel Response to Contamination Incident

Petitioners contend that NIH personnel responding to the scene of the incident failed to respond in a timely manner to the contamination event, resulting in Dr. Ma's transport to Holy Cross Hospital more than 3 hours after discovery of her contamination. Petitioners state that after Radiation Safety Branch (RSB) officials confirmed Dr. Ma's contamination, they took 1 hour searching for a shower to decontaminate her, that RSB officials surveyed the conference room and refrigerator, and that RSB officials directed Dr. Ma to provide a urine sample, which confirmed that her contamination was internal.

Dr. Zheng reported the internal contamination of Dr. Ma to the NIH emergency number at approximately 5:58 p.m., shortly after discovery of her contamination. The first NIH personnel (two emergency medical technicians) responded immediately and arrived on the scene with an ambulance at approximately 6:00 p.m. Dr. Zheng also notified Petitioners' immediate supervisor, Dr. Weinstein, who was on the premises at the time. Dr. Weinstein, the Authorized User, contacted the RSB at 6:00 p.m. and notified the Chief of the Radiation Safety Operations Section about the contamination incident. In addition, the NIH Fire Department independently notified the Deputy RSO, at approximately the same time, of a possible radioactive material contamination event involving an ''injection of radioactive material.'' (The Deputy RSO is at the top of the emergency call list for response to incidents involving radioactive materials). The Deputy RSO advised the RSO of the report at approximately 6:00 p.m. and contacted the NIH Occupational Medical Service (OMS) for information on the incident.

At approximately 6:15 p.m., the first of two responding RSB health physicists was notified by the RSB receptionist that a second health physicist was on the phone with the RSB Section Chief talking about a possible contamination event in Building 37. The two responding RSB health physicists picked up spill and skin decontamination kits (which is a routine and necessary event response function) and responded to Building 37. Both health physicists met the Deputy RSO in the RSB parking lot at Building 21, and were informed that Dr. Ma was being transported to OMS at Building 10. The health physicists responded directly to OMS and were advised by the physician on duty that Dr. Ma was still in Building 37. The health physicists then responded to the fifth floor of Building 37, arriving at approximately 6:40 p.m.

To determine if Dr. Ma's contamination was external or internal and to identify the source of the contamination, the RSB took several measures. The emergency medical technicians and the RSB both evaluated Dr. Ma's condition and questioned Petitioners about the source of her contamination. The RSB took smears of Dr. Ma's hands, neck, and face to determine if any of the contamination was removable and then had Dr. Ma change out of her clothes into clean scrubs to see if her clothing was radioactive. None of the smears, surveys, or clothes of Dr. Ma showed external contamination.[16] The RSB asked Dr. Ma to submit a urine sample at approximately 7:00 p.m. The sample was surveyed by the RSB and found to contain radioactivity, indicating that the contamination was internal. The RSB health physicists performed surveys with portable radiation instruments to determine whether radioactive contamination was present in the laboratory, adjacent hallways and corridors, and in the conference room. Shortly after 8:00 p.m., NIH transported Dr. Ma to Holy Cross Hospital, where Dr. Ma arrived at approximately 8:20 p.m. Holy Cross was selected over Suburban Hospital, which was much

[14] See letter from M. Gottesman, NIH, to R. Blough, NRC Region I, dated June 23, 1997.

[15] License Condition 29 requires conduct of the NIH program in accordance with the NIH license application dated July 28, 1986. Item 10.6 of the July 28, 1986, application required, in part, that the Authorized User provide to the Radiation Safety organization a completed Form NIH 88–1, ''Request for Purchase and Use of Radioactive Materials,'' for each incoming shipment before the materials are released to the investigator. Form NIH 88–1, was provided as attachment 10–F to the July 28, 1986, application. Form NIH 88–1 requires, in part, that the radiation safety identification number and names of all persons who will use the radioactive material, the name of the authorized investigator, and the signature of the authorized investigator, be entered on the form.

[16] Because Dr. Ma's clothing was not contaminated, there was no need for her to shower in order to remove external contamination. Petitioner's assertion that RSB took 1 hour searching for a shower to decontaminate Dr. Ma was not substantiated by the inspections or the investigation.

closer, because Suburban Hospital did not have an obstetrics department.

Based on the inspections and the investigation, NRC staff concludes that NIH personnel responded properly and in a timely fashion to the incident. The actions taken by NIH to determine whether Dr. Ma was externally or internally contaminated and to identify the source of her contamination are time-consuming steps that must be taken during event response to ensure that the spread of radioactive contamination is prevented, especially when the event involves the transfer of personnel off the licensee's site and into a hospital setting. Moreover, because there were no signs of a life-threatening condition or immediate danger to Dr. Ma, which would have made immediate transport necessary, the Licensee's attention to these measures was eminently reasonable before transport of Dr. Ma to the hospital.

F. Defects in NIH Emergency Response to Dr. Ma's Contamination

Petitioners state that NIH's emergency response to Dr. Ma's contamination was defective in that NIH gave inappropriate and inadequate information and advice to Dr. Ma regarding her level of contamination, and failed to advise Dr. Ma concerning precautions to prevent spreading that contamination. Specifically, Petitioners state that one of the two RSB health physicists who responded to the event erroneously told Petitioners, before Dr. Ma's transport to Holy Cross Hospital and before any analysis concerning the extent of Dr. Ma's contamination, that the exposure Dr. Ma received was well within the allowable limits, that there was no risk to her, and, although it was not certain, that there appeared to be no problem posed to Dr. Ma's fetus. Additionally, Petitioners state that no one warned Dr. Ma about the possibility of vomiting as a consequence of her contamination, or instructed Dr. Ma as to appropriate steps to prevent contamination of her home as a result of vomiting. As a result, Dr. Ma contaminated her car and apartment.

The Petitioners are correct in stating that at the time that the two RSB staff responded to the event, there was no way (within the first few minutes) to determine if the radiation exposure that Dr. Ma received was within NRC regulatory limits, or if the dose received was harmful. Indeed, the only thing that could be determined at that time was whether or not the radioactive contamination was internal or external, which the RSB staff did effectively.

There are no NRC requirements concerning advice by licensees to their employees during emergencies concerning the possibility of further contamination of the employee's home and belongings. As occupational radiation safety workers at NIH, the Petitioners were required to, and did, complete formal radiation safety training on November 29, 1994. As part of that training, personnel protective procedures were described to limit the exposures from both external and internal sources of radiation. In addition, as part of their required daily radiation surveys, the Petitioners were aware of the potential hazards associated with contamination and radioactive material in their control and the need to isolate and remove any detected contamination.

On the evening that Dr. Ma became internally contaminated with P–32, the RSB staff at NIH and the hospital staff at Holy Cross informed Dr. Zheng that Dr. Ma's blood and urine were contaminated. The next day, the RSB staff surveyed the Petitioners' automobile because Dr. Ma had indicated that she had vomited in it earlier that morning. RSB staff found contamination inside the passenger's side of the car and decontaminated the affected area immediately. RSB staff also surveyed the Petitioners' apartment where contaminated areas were cleaned up or physically removed material for radioactive decay. Effective communications during emergencies are difficult, at best, and might have been improved by reminding Dr. Ma of the potential for not only her excreta being contaminated, but also any other bodily fluids released as well. However, the failure to fully advise Dr. Ma of the potential spread of contamination via body fluids was not a violation of any NRC requirement.

Petitioners also state that the NIH response to Dr. Ma's contamination was defective because RSB officials failed to secure the area, thus providing an opportunity for NIH personnel to tamper with or contaminate evidence.[17] In fact, before departing the scene of the event on June 29, 1995, NIH RSB personnel locked the conference room and marked it with security tape. The NIH RSB also asked Dr. Weinstein to secure the laboratory, which he did by locking it. On June 30, 1995, the NIH RSB changed the locks to the conference room, and again locked the laboratory and then secured it with police tape. Based on a review of the evidence, NRC concludes that NIH took all reasonable measures to secure the scene after responding to the event.

G. NIH Conduct of Surveys After Contamination Incident

Petitioners state that in violation of 10 CFR § 20.201(b) and an October 14, 1992, commitment by NIH to emphasize to all users the importance of notifying Radiation Safety promptly of spills of radioactive materials when there is personnel contamination, NIH failed to conduct surveys reasonably necessary under the circumstances surrounding discovery of Dr. Ma's contamination on June 29, 1995, and thus failed to detect P–32 contamination of a water cooler until July 14, 1995, which caused an additional 26 people, including Dr. Zheng, to become internally contaminated.

NRC stated in its AIT report of January 13, 1997, that because NIH did not survey the water cooler in the corridor near Petitioners' laboratory until July 14, 1997, 26 other individuals (besides Dr. Ma) were internally contaminated with P–32 by drinking water from the cooler. After review of all the evidence, however, the staff concludes that, although it would have led to a more desirable outcome to have identified the contaminated water cooler earlier, under the circumstances, NIH conducted all reasonably necessary surveys. When NIH safety response personnel were called to the scene, Dr. Ma and Dr. Zheng insisted that Dr. Ma had been contaminated by food that she had stored in the conference room refrigerator. Dr. Ma and Dr. Zheng also told RSB personnel that they brought all their own food and beverages to work with them. Immediately after the event, Dr. Ma and Dr. Zheng denied that they drank any liquid from Building 37, and stated that they brought all liquids from home. In the days after the incident, Dr. Zheng denied drinking water from the water cooler. Nonetheless, NIH sought to determine if other individuals also had been internally contaminated. After specimens provided by other NIH employees on July 13, 1995, demonstrated their internal contamination with P–32, and in an attempt to identify a common source of contamination, NIH surveyed the water coolers and coffee stations on the fifth floor of Building 37 on July 14, 1995, and identified contamination in a water cooler located in the hallway. Only later

[17] Petitioners assert that this provided Dr. Weinstein with an opportunity to ''find'' a coffee cup with a centrifuge tube, both contaminated, that RSB officials attest were not present when they surveyed the same area earlier, and that, on his own initiative, Dr. Weinstein put the items in a plastic bag and moved the items into his lab and locked the door. In fact, two NIH employees had seen the coffee cup and centrifuge tube in the hallway near Petitioners' lab over a period of 1 to 7 days before the event. Additionally, the NIH RSB directed Dr. Weinstein to put these items aside for the NIH RSB's later examination and to secure the laboratory.

did Drs. Ma and Zheng tell the NIH RSB that they had drunk from the contaminated water cooler. Finally, although NRC's AIT inspection arrived at NIH on June 30, 1995, one day after the discovery of Dr. Ma's contamination, NRC staff did not consider the possibility that Dr. Ma might have been contaminated by using a water cooler or suggest surveying water coolers.

Accordingly, the NRC staff concludes that under the circumstances, NIH did not fail to conduct reasonably necessary surveys after discovery of Dr. Ma's contamination in violation of 10 CFR § 20.1501(b).[18]

H. Procedures for Collection of Samples in Contamination Events

Petitioners state that before Dr. Ma's internal contamination, NIH failed to have a procedure in place to provide clear instructions to Dr. Ma about sample collection. Petitioners note that John Glenn, Ph.D. (Dr. Glenn), Chief, Radiation Protection and Health Effects Branch, Office of Nuclear Regulatory Research, NRC, stated at the December 19, 1995, Commissioner briefing that NIH ''* * * lost information about early excretion of P–32 because clear instructions were not provided to the exposed individual about sample instruction [collection of samples].'' [19]

The events and transcript from the December 19, 1995, Commissioner briefing on The Generic Implications of Recent Events Involving Ingestion of Radioactive Material at Research Facilities reveal a similarity between the NIH AIT and the Massachusetts Institute of Technology (MIT) Incident Investigation Team (IIT) events in that both licensees lost information about early excretion of P–32 because clear instructions had not been provided to the exposed individual about how to collect samples. Although there is a considerable amount of guidance in the scientific literature available on the management of contaminated persons, NRC staff determined that it would be beneficial to provide guidance to licensees on the levels of intake that should be considered for medical evaluation, the available methods to reduce the committed dose resulting from an intake, as well as guidance for the collection of samples for analysis. Consequently, NRC staff has completed its evaluation of current regulatory guidance on the collection of samples for analysis, as well as the analysis of intakes, and will revise the existing regulatory guidance to licensees.

Accordingly, the Petitioners' request for NRC action to ensure adequate procedures and instructions to exposed persons for sample collection is granted as described above.

I. Dr. Weinstein's Interactions With NIH Radiation Safety Response Personnel

Petitioners state that Dr. Weinstein interfered with the NIH radiation safety response to Dr. Ma's contamination, and delayed transport of Dr. Ma to the hospital for emergency treatment. Specifically, Petitioners state that Dr. Weinstein performed smear tests; directed Dr. Ma to drink a lot of water; argued with NIH RSB officials about how to save urine samples in order to get a correct determination of the amount of radiation Dr. Ma had ingested; attempted to interfere with RSB personnel efforts to question and counsel Dr. Ma about the biological effects of radioactive materials and her contamination; tried to answer questions asked of Dr. Ma by RSB personnel; and attempted to usurp RSB functions by conducting a survey of the NIH conference room where Dr. Ma had stored her food.

Based on the inspections and the investigation, NRC concludes that Dr. Weinstein did not interfere with the reasonable and necessary NIH radiation safety personnel measures in response to the contamination event, delay Dr. Ma's transport to the hospital, or usurp or attempt to usurp RSB functions. Both Dr. Weinstein and Dr. Zheng provided assistance to NIH RSB personnel in counting smears taken from Dr. Ma by RSB personnel. Dr. Weinstein reasonably asked Dr. Ma to drink liquids. (Dr. Weinstein recalled that the NIH RSB recommended over the phone that Dr. Ma drink liquids to stay hydrated.) The Holy Cross Hospital ER physician and the NIH RSO agreed that intravenous hydration of Dr. Ma was advisable. Petitioners state that Holy Cross Hospital issued instructions to Dr. Ma on her discharge to maintain good hydration. Additionally, the RSB directed Dr. Ma to provide a urine sample for immediate survey, a measure necessary for the NIH RSB to determine with certainty whether Dr. Ma was internally contaminated and thus whether to transport Dr. Ma to the hospital. The evidence does not corroborate the Petitioners' assertion that Dr. Weinstein argued with RSB personnel about the proper procedure for saving specimens from Dr. Ma. NIH RSB personnel at the scene described Dr. Weinstein as urging Dr. Ma's immediate transport to the hospital, along with Dr. Zheng, and as being impatient. Dr. Weinstein was not the only non-RSB person to survey the conference room. Dr. Zheng told an NIH colleague that he had found radioactive contamination in the conference room by surveying it. That colleague and a second colleague then surveyed the conference room for contamination shortly before arrival of the RSB. Dr. Weinstein went to survey the conference room after a third and a fourth colleague had already begun surveying the room.

J. Medical Care of Dr. Ma and Treatment To Reduce Her Contamination

Petitioners state that NIH personnel gave conflicting and harmful directions to Holy Cross ER personnel which delayed Dr. Ma's treatment, that NIH provided inadequate medical treatment of Dr. Ma, which was completely ineffective to reduce her contamination, and that the only effort NIH made to hasten the removal of the ingested radioactivity was to give Dr. Ma intravenous infusions of fluid at Holy Cross Hospital. Petitioners state that the Holy Cross ER Physician's attempt to consult with REAC/TS in Oak Ridge, Tennessee, was frustrated because the Holy Cross Hospital telefax machine was unable to receive information from REAC/TS. Petitioners believe that Dr. Ma should have been given phosphate orally as the buffered sodium salt, calcium intravenously, and parathyroid intramuscularly, but was only given intravenous infusions of fluid (hydration therapy), based on directions by NIH personnel, which resulted in no discernible enhancement of P–32 elimination.

Petitioners state that Dr. Weinstein's presence in Dr. Ma's treatment points up fundamental flaws in NIH medical intervention and investigative security protocols, and the fact that Dr. Ma was directed by the Holy Cross ER physician to follow-up with Mr. Zoon, Dr. Weinstein, and Dr. Ma's personal obstetrician-gynecologist (OB–GYN) ''demonstrate[s] that the ER physician looked to NIH officials, including Dr. Weinstein, to direct treatment of Dr. Ma for internal contamination.''

Petitioners state that NIH provided inadequate medical care to and follow-up on Dr. Ma. Specifically, NIH had no plan in place to ensure that one single person was in charge of directing and coordinating a contaminated employee's medical care and follow-up. No one from NIH met with Dr. Ma to discuss

[18] At the time of the incident, 10 CFR § 20.1501(a) required licensees to perform surveys that are reasonable under the circumstances. On January 1, 1993, 10 CFR § 20.201, with a similar requirement, became extant.

[19] Dr. Glenn's comment was made before full information was available regarding sample collection after the NIH event. With the benefit of all the evidence, it is now apparent that clear instructions were provided to Dr. Ma and that no information was lost. See Section III.K.(2).

her contamination levels, and what, if any, medical treatment might decrease her contamination levels, except for a copy of the early NIH contractor, Oak Ridge Institute for Science and Education (ORISE) intake calculation of 9.8 MBq (265 μCi), given to Dr. Ma in July 1995 by the NIH RSO. The NIH OMS failed to provide any medical care or follow-up treatment to remove the ingested radioactivity. Petitioners state that Dr. Stansbury of OMS examined Dr. Ma on June 30, 1995, and that no services were provided by OMS after that date, except to request blood work results. Petitioners state that although Dr. Ma told Dr. Stansbury of her severe lower thoracic pain, Dr. Stansbury attributed the pain to Dr. Ma's pregnancy and recommended no follow-up other than for Dr. Ma to see her OB–GYN.

Petitioners state that on August 4, 1995, they visited OMS and reported that Dr. Ma was experiencing vomiting and severe pain in her lower right side, but that Dr. Ma was again referred to her OB–GYN. Petitioners state that on August 8, 1995, Dr. Ma again reported to OMS that she continued to experience frequent vomiting and nausea, and again no treatment or intervention was suggested. After the end of July 1995, no one from NIH requested additional urine samples from Dr. Ma, only blood samples. Dr. Ma states that subsequent tests revealed that the cause of Dr. Ma's lower thoracic pain was a significant liver function abnormality resulting from her contamination.[20]

NIH took reasonable and appropriate measures to determine whether Dr. Ma's contamination presented a life-threatening condition or immediate danger to Dr. Ma and her fetus, and whether her contamination was external or internal, before transporting Dr. Ma to a hospital for treatment. See Section III.E., *supra.* NIH also contacted the on-call physician from REAC/TS and put the REAC/TS physician in direct contact with the ER physician at Holy Cross Hospital, thus making expert advice available to Holy Cross Hospital and expediting Dr. Ma's treatment by Holy Cross Hospital. The ER physician decided not to follow the recommendation of the REAC/TS physician to administer a phosphate solution for dilution and displacement of the P–32 because of Dr. Ma's pregnancy. After consultation with both the REAC/TS physician and the NIH RSO, the ER physician ordered intravenous infusions of fluids (hydration) in order to dilute Dr. Ma's internal contamination, as was his prerogative. Additionally, based on the inspections and the investigation, NRC cannot conclude that Dr. Weinstein influenced or interfered with the Holy Cross ER physician's treatment decision regarding Dr. Ma's contamination. Before he arrived at Holy Cross at approximately 11:15 pm, Dr. Weinstein was aware that the NIH RSB recommended that Dr. Ma ''push'' fluids in order to maintain hydration. See Section III.I., *supra.* The IV hydration ordered for Dr. Ma was started around 9:00 p.m., long before Dr. Weinstein arrived at Holy Cross or spoke to the ER physician.

Moreover, based on the medical information made available by Petitioners to NRC's Medical Consultant, the NRC concludes that the symptoms reported by Dr. Ma were not related to her ingestion of P–32. The professional literature reveals three cases in which persons were inadvertently administered high levels of P–32.[21] The intakes in these cases were approximately 15 to 30 times greater than Dr. Ma's intake of 820 to 1300 mCi of P–32. The person with the highest intake reported symptoms that were consistent with low blood counts, an expected response to exposure to relatively high radiation doses. Blood count depressions, with no symptoms, were observed in the other two cases. NRC's Medical Consultant concluded that Dr. Ma's white blood cell count, white blood cell differential count, and her platelet count were all within normal limits, and that minor abnormalities in Dr. Ma's hematological profile, which did not include blood count depression, were consistent with typical plasma volume expansion during pregnancy. Additionally, radiation intakes sufficiently large to cause nausea and vomiting are accompanied by a depression or ablation of the bone marrow, which was not indicated by Dr. Ma's laboratory data. Finally, experience with intakes of P–32 much larger than Dr. Ma's intake, both accidental and as part of medical treatment, in which P–32 is frequently injected intravenously in doses 7 to 15 times great than Dr. Ma's intake, has not been observed to produce clinical symptoms. Accordingly, the NRC concludes that any symptoms Dr. Ma may have experienced, such as nausea and vomiting,[22] resulted from causes other than her ingestion of P–32.

NRC licensees are clearly required to determine the nature and extent of radiological overexposures to occupational workers and members of the public, to maintain records of such exposures, and to provide notifications to exposed individuals and reports to NRC. See, for example, 10 CFR §§ 19.13, 20.1204, 20.1501, 20.1502, 20.2106, 20.2107, 20.2202, 20.2203, 20.2205, and 20.2206. NRC requirements, however, impose no additional obligations upon licensees to provide medical care and follow-up to individuals exposed to radioactive materials for the purpose of removing radioactive contamination or ameliorating the medical effects of contamination.

In view of the above, to the extent that Petitioners are dissatisfied with the medical treatment provided to Dr. Ma by Holy Cross Hospital, or with any medical care provided by NIH to Dr. Ma apart from dose assessment, dose recordkeeping, or notification and reporting of Dr. Ma's dose, Petitioners' remedies, if any, do not lie with NRC.

K. Estimates of Internal Contamination of Dr. Ma and Her Fetus

Petitioners state that NIH failed to take proper actions to accurately assess, and as a result, greatly underestimated Dr. Ma's internal contamination, that NIH failed to consider all the relevant data in assessing Dr. Ma's internal contamination, demonstrating that NIH is not able or willing to impartially evaluate its worker's radiation exposure levels when exposures are in excess of Federal limits, and that NIH lied to Dr. Ma, to Federal regulators and to the public, about the magnitude of the exposure and the likely harm to Dr. Ma and her fetus. Specifically, the Petitioners state the following:

- NIH failed to take suitable and timely measurements from Dr. Ma to accurately calculate her occupational dose, in violation of 10 C.F.R. § 20.1204(a). NIH should have taken a full 24-hour urine sample following detection of Dr. Ma's contamination. Over the first two days urine was collected as spot samples at each void, rather than collecting the entire urinary excretion over a 24-hour period as recommended by NUREG/CR–4884, ''Interpretation of Bioassay Measurements,'' (1987). Additionally,

[20] Medical data provided by Petitioners did not substantiate this assertion.

[21] Blood, Vol. 61, No. 4 (1983), pp. 746–750; Schweizerische Medizinische Wochenschrift (Journal Suisse de medecine) Vol. 124, No. 42, pp 1848–51 (October 22, 1994); and American Journal of Medical Sciences, Vol. 254, No. 4, pp. 451–63 (October 1967). See also ''Ingestion of P–32 at Massachusetts Institute of Technology, Cambridge, Massachusetts, Identified on August 19, 1995,'' NUREG–1535 (December 1995).

[22] Dr. Ma's reported nausea and vomiting started long before her ingestion of P–32. An NIH technician observed Dr. Ma ''always'' vomiting at NIH for approximately two months prior to the contamination event.

NIH should have continued 24-hour urine collections and analysis until the activity level of the samples no longer yielded useful results. Instead, the NIH dose evaluation was based solely on samples collected during the first month following the intake.

• NIH incorrectly suggests that Dr. Ma is responsible for NIH's inadequate urine analysis because she returned a weekend's collection of urine in one carboy (a container), rather than three, and failed to follow through with continuing urine collection despite urging by NIH personnel. Dr. Ma did everything requested of her by NIH until it became evident that NIH had little interest in her health or in providing her medical care. NIH OMS and RSB officials asked Dr. Ma to collect all of her urine over the weekend following her contamination. Dr. Ma returned a weekends' urine collection in one carboy rather than three because two of the three wide-mouthed containers provided by RSB officials were defective and leaked. Dr. Ma was asked to bring in urine samples for the couple of weeks following her contamination. Dr. Ma collected her urine voluntarily until the end of July 1995, and submitted urine samples through July 27, 1995. Dr. Ma stopped providing samples because she did not receive any assistance or information from NIH. NRC estimated a significantly greater dose than did NIH, using the same information available to NIH.

• Between June 29, 1995, and July 27, 1995, Holy Cross provided NIH with twenty-five urine samples collected by Dr. Ma.

• Based on a whole body scan performed by NIH on June 30, 1995, Dr. Jorge Carrasquillo, Acting Chief, Nuclear Medicine Department, NIH, estimated that Dr. Ma had still retained a total of 862 μCi (31.9 MBq) of P–32 on that date.

• NIH's preliminary estimate of Dr. Ma's ingestion of P–32 on July 3, 1995, was approximately 300 μCi (11.1 MBq), which was not based on a 24-hour sampling of standard systemic excreta data as recommended by NUREG/CR–4884 and the National Council on Radiation Protection and Measurements (NCRP) Report No. 87, ''Use of Bioassay Procedures for Assessment of Internal Radionuclide Deposition'' (1987). Additionally, the initial dose estimate relied entirely on analysis of urine samples and was not confirmed through analysis of fecal samples, which led to significant understatement of Dr. Ma's internal contamination.

• The July 5, 1995, NIH estimate of Dr. Ma's intake was 265 μCi (9.8 MBq) of P–32 and was not based on the total volume Dr. Ma excreted, but was based on a sample. When the NIH RSO provided Dr. Ma with a copy of the ORISE estimate, he told Dr. Ma that the NIH estimate was ''more or less the same.''

• By letter dated July 28, 1995, Mr. Zoon advised NRC's Region I Office that evaluation of the total intake of Dr. Ma was continuing and could result in an estimated intake potentially exceeding the 10 CFR part 20, Appendix B, Annual Limit on Intake (ALI) for P–32 of 600 μCi (22.2 MBq).

• At NRC's request, NIH asked its first consultant, ORISE, to confirm isotopic analyses performed by the NIH RSB with four of the first 15 urine specimens taken on June 29 and 30, 1995, and with three urine samples and one blood sample. None of the samples was taken from a full 24-hour period and NIH failed to take any fecal samples. The August 15, 1995, revised estimate of Dr. Ma's intake performed by ORISE for NIH was between 740 and 820 μCi (27.4 and 30.3 MBq), resulting in an effective dose. equivalent to Dr. Ma of between 5.8 and 6.4 rem (58 and 64 mSv), and to her fetus a dose of between 4.6 and 5.1 rem (46 and 51 mSv).

• On August 29, 1995, NIH transmitted to NRC the ''final'' NIH assessment of Dr. Ma's effective dose equivalent as 4.17 rem (41.7 mSv), based upon an estimated intake of 500 μCi (18.5 MBq), and of the dose to her fetus as 3.2 rem (32 mSv). This analysis was not conducted in accordance with draft ANSI N13.30, ''Performance Criteria for Bioassay'' (1989). NIH also failed to continue the collection and analysis of excreta to ensure that Dr. Ma's excretion of P–32 followed the mathematical model NIH had used to predict her initial dose, and NIH failed to account for the effect of hydration therapy when initially evaluating the urine data. NIH's use of the ''weighted least squares fit'' method to assign its final dose is unacceptable because actual excretion does not follow the anticipated model.

• NRC's estimate of Dr. Ma's intake was between 30.3 and 48.1 MBq (820 and 1300 μCi) and of her internal committed effective dose equivalent (CEDE) was between 80 and 127 mSv (8.0 and 12.7 rem). Although both NRC and Petitioners' consultant excluded data from the first 2 days of urine collection as unreliable, NIH relied on that data primarily.

• The Petitioners' consultant estimated that Dr. Ma ingested 1000 μCi (37 MBq) of P–32 corresponding to a CEDE of 9.2 rem (92 mSv), and that her fetus received a dose of between 3 and 6.4 rem (30 and 64 mSv), based on an analysis of eleven urine specimens collected from Dr. Ma between June 29 and August 23, 1995.

Despite the inherent limitations in analysis based on excreta data and some differences in the assumptions used to evaluate the ingested activity and radiation dosimetry, the final estimates obtained by NIH, the Petitioners', and NRC are reasonably close. See Table, *infra*. Accordingly, the Petitioners concerns that NIH did not accurately assess Dr. Ma's dose and the dose to her fetus are unsubstantiated.

FINAL ESTIMATES OF RADIATION DOSE TO DR. MA AND HER FETUS

Organization	Date	Dr. Ma's dose estimate		Dr. Ma's Fetal dose estimate	
		(rem)	(mSv)	(rem)	(mSv)
NIH	7/96	4.7–7.0	47–70	3.7–5.4	37–54
NRC	12/95	8.0–12.7	80–127	5.1–8.1	51–81
Petitioners' Consultant	10/95	9.2	92	3.0–6.4	30–64

(1) *Petitioners' Estimates:* Petitioners retained the services of David A. Dooley, Ph.D., a Certified Health Physicist with expertise in internal dose assessment, to perform an assessment of the radiation dose and its effects upon Dr. Ma and her fetus. Based upon radioanalysis conducted by TMA/Norcal Laboratory, of 11 urine specimens collected by Dr. Ma between June 29 and August 23, 1995, Dr. Dooley estimated that Dr. Ma received an exposure of 9.2 rem (92 mSv) and that her fetus received an exposure of 3.0 and 6.4 rem (30 and 64 mSv). Although Dr. Ma continued to submit urine samples to Dr. Dooley until October 4, 1995, analysis of those samples did not

result in revision of Dr. Dooley's estimates.[23] Dr. Dooley estimated that, because of the P–32 intake, Dr. Ma would suffer an increased lifetime excess cancer risk of approximately 30 percent to 83 percent, and her fetus would experience a risk of childhood cancer ''. . . 30 to 150 times that of an unexposed child.''[24]

(2) *NIH Estimates:* NIH performed an assessment of Dr. Ma's intake of P–32, the resultant radiation exposure received by Dr. Ma, and the radiation exposure received by her fetus based on urine specimens collected by Dr. Ma.

On June 29, 1995, the NIH RSB gave instructions to collect all of Dr. Ma's urine to Dr. Ma, to the paramedics who transferred her to the hospital, and to the Holy Cross ER physician. The Licensee also contacted radiation emergency medical professionals via telephone at REAC/TS and arranged for the REAC/TS physician to speak directly with the Holy Cross Hospital ER physician, to assist with the evaluation of Dr. Ma's P–32 intake and the radiation dose to Dr. Ma and to her fetus. Given the apparent level of P–32 internal contamination, Dr. Ma's pregnancy, and the ER physician's lack of experience in dealing with radioactive material internal contamination events, this was an eminently reasonable measure. The REAC/TS physician, who also happened to be an OB/GYN, believed that medical intervention at the hospital would not have been very effective in inhibiting phosphorus absorption from the gastro-intestinal tract because, by the time Dr. Ma had arrived at Holy Cross, and based on discussion with the RSB, the REAC/TS physician understood that over 9 hours had elapsed since the suspected ingestion and the P–32 would have essentially been totally absorbed over this time period. The REAC/TS physician also asked the ER physician to instruct Dr. Ma to collect 24-hour urine samples for evaluation of P–32 kinetics.'' [25] The Holy Cross ER physician recalled that the NIH RSO requested that all of Dr. Ma's urine was to be measured, the volume for each void recorded, and then all of the urine to be placed in one container every 24-hours. In addition, Dr. Weinstein suggested to the ER physician that each urine void, at least during hospitalization, be saved separately, so that more time points would be available for modeling in determining the radiation exposure. He also suggested that the same could be accomplished by saving a small sample from each void (and recording the volume collected), separate from the continuing 24-hour collection. Dr. Weinstein believed that either procedure, if followed, would result in the availability of more information and no loss of urine.

The Holy Cross ER physician decided to develop his own method for collection of urine, and instructed his nurses that each time Dr. Ma voided, the amount would be measured, a small sample of each void would be maintained separately, and the rest would be put into one large container. The instructions given by the Holy Cross ER physician to Dr. Ma for collection of urine did not differ significantly from the recommendation of the REAC/TS physician, or of Dr. Weinstein, and were appropriate for proper assessment of Dr. Ma's intake and exposure, as well as that of her fetus. Holy Cross Hospital instructed Dr. Ma to collect urine on a 24-hour basis. When Dr. Ma reported to RSB on June 30, 1995, she brought the urine collected since departing Holy Cross, and was instructed to continue collecting urine on a 24-hour basis.

NIH states that when Drs. Ma and Zheng reported to the RSB for follow-up at 11:00 a.m. on June 30, 1995, they brought with them Dr. Ma's urine, in tubes and a container, and stated to RSB staff that was all the urine collected at the hospital and since discharge. Later that day, when Dr. Ma complained of back pain, she was escorted, at RSB's recommendation, to the NIH OMS where she was examined by a physician, and additional urine and blood samples were taken for radioanalysis. The results of the blood samples were within the expected range for a woman in her 17th week of pregnancy. Dr. Ma returned for a gamma camera scan at 5:00 p.m. at the NIH Clinical Center, and at that time was provided three carboys by RSB for the upcoming weekend and was advised to collect all her urine over the weekend using one carboy for each day. NIH states that on Monday, July 3, 1995, Dr. Ma returned only one carboy full of urine, stating to RSB staff that it was the urine from the evening of June 30 to July 1, 1995.

Based on NIH's preliminary notification, NRC issued PNO-I–95–025, ''Internal Contamination of Researcher,'' on July 3, 1995, which stated that NIH had indicated that a 32-year old female, who was in her fourth month of pregnancy, had received an estimated ingestion of approximately 11.1 MBq (300 μCi) of P–32.[26]

Subsequent urine samples, when received from Dr. Ma, were analyzed promptly. NRC's AIT determined that the licensee analyzed all samples accurately, as confirmed by the analyses performed for NRC by ORISE, and by NRC's Region I Laboratory. The periodic reanalysis of samples by the Licensee to ensure that the samples contained no additional radioactive contaminates was appropriate.

On August 29, 1995, based upon additional urine analysis, NIH performed another assessment of Dr. Ma's exposure. NIH calculated Dr. Ma's effective dose equivalent to be 4.17 rem (41.7 mSv), based upon an estimated intake of 500 μCi (18.5 MBq), and the dose to Dr. Ma's fetus to be 3.2 rem (32 mSv). This reassessment was based on a total of 26 urine samples obtained from Holy Cross Hospital and Dr. Ma.

In 1996, NIH contracted with Skrable Enterprises, Inc., to perform a reassessment of all available urine data, as well as an evaluation of creatinine levels in the urine samples in order to confirm sample validity. This consultant suggested modification of the standard model parameters for the short-term retention compartments and use of creatinine normalized data to improve the fit of the estimate to the sample data. These suggestions accounted for the varying time periods of sample collection. Based upon this reassessment, NIH revised its estimate of Dr. Ma's CEDE to between 4.7 and 7.0 rem (47 and 70 mSv), corresponding to an intake range of between 570 and 840 μCi (21.1 and 31.1 MBq). The revised dose to the fetus was calculated to be between 3.7 and 5.4 rem (37 and 54 mSv). Also on July 30, 1996, NIH RSB staff delivered its revised estimates entitled, ''Report of 1995 Radiation Dose, NRC License 19–00296–10, '' to Dr. Ma at NIH, which summarized the doses described above and stated that the ''levels (received by Dr. Ma) are considered to be safe and are not expected to result in a health impact.'' [27]

Regarding the concerns of the Petitioners' that NIH failed to account for the effect of hydration therapy, NIH's report of its last estimate of Dr. Ma's

[23] See Letter dated April 16, 1996, from Judith A. Wolfer, Esq., to Cynthia Jones, NRC.

[24] See Letter from Dr. David Dooley, dated April 15, 1996, to Debra C. Katz, Esq.

[25] Letter from Ronald E. Goans, Ph.D., M.D., REACT/TS, dated November 8, 1995, to Shawn W. Goggins, NIH, and memorandum from Ronald E. Goans, Ph.D., M.D., dated July 17, 1995, to Dr. Robert Ricks, REAC/TS.

[26] PNs constitute early notice of events of possible safety or public interest significance. Information contained in PNs is received without any verification or evaluation, and is basically all that is known by the licensee and NRC staff as of the date of issuance to the public. They are also known as preliminary notifications of occurence (PNOs)

[27] See NIH memorandum from the NIH RSO, dated July 30, 1996, to Dr. Ma.

1995 occupational radiation dose states that NIH's Consultant was not only aware of the large variation exhibited by the bioassay data as a result of hydration therapy, but accounted for these differences by using a modified biokinetic model and creatinine-normalized urine data to account for the large variances in the bioassay data. Moreover, the last NIH estimates are reasonably close to those of NRC and the Petitioners. Accordingly, the effects of hydration therapy upon the NIH dose estimates appear to raise no cause for concern.

As to the Petitioners' concerns that NIH's use of the weighted least squares fit method was unacceptable because actual excretion does not follow the anticipated models, NRC's second consultant, Lawrence Livermore National Laboratory (LLNL), performed an independent assessment of the NIH data to determine if differences in the dose estimates may have been due to the use of the different internal dose assessment codes. When the first two data values were removed from the NIH data set, the unweighted least squares intake assessment using the CINDY code was 30 MBq (810 μCi). Intake assessments from CINDY using the LLNL treated data set ranged from 20.7 to 40.7 MBq (560 to 1100 μCi). This range of results is also consistent with the ORISE intake estimates of between 22.9 and 30.3 MBq (620 and 820 μCi). These results indicate that differences in correcting for 24-hour excretion also do not significantly influence the intake estimates. Therefore, the differences in the dose assessments between NIH's August 29, 1995, estimate and NRC's estimate were mainly due to differences in data handling. The major difference in these two dose estimates was the treatment of the sample data from the first few days post intake. However, since the last NIH estimates now yield relatively close results with those of the Petitioners and NRC, NIH's use of the least squares method in its earlier estimate is not cause for concern.

After the surveys and bioassays of persons who had access to the contaminated conference room, NIH determined that 26 individuals, including Dr. Zheng and in addition to Dr. Ma, were positive for P–32 contamination. All of the 21 individuals who were occupational workers as defined by 10 CFR § 20.1003 received radiation exposures of less than 10 percent of NRC's annual occupational exposure limit of 50 mSv (5 rem) specified by 10 CFR § 20.1201(a)(1)(i). Of the five individuals who were members of the public, as defined by 10 CFR § 20.1003, one individual received a dose in excess of NRC's annual limit of 1 mSv (0.1 rem) for members of the public specified by 10 CFR § 20.1301(a)(1). This individual's dose was estimated to be between 1.5 and 2.5 mSv (150 and 250 millirem].

Petitioners are correct in stating that the July 3, 1995, preliminary NIH estimates for Dr. Ma and her fetus' intake were not based upon full and complete data. NRC requires licensees to notify NRC within 24 hours of any event which may have caused, or threatens to cause, an individual to receive a dose exceeding 50 mSv (5 rem). 10 CFR § 20.2202(b)(1)(i). Once information is reported to NRC, NRC issues a preliminary notification in accordance with NRC Inspection Manual Chapter 1120, Sections 1120–07 and 1120–08. These notifications promptly provide information to the Commissioners, as well as other NRC and Agreement State management on matters that are of significant safety concern or have, or potentially could have, high public interest. These notifications, however, are not assumed to constitute final estimates.

As far as the Petitioners' concern that the NIH bioassay program was faulty in not collecting and analyzing fecal samples, NRC-approved models and methods provides guidance for the use of either urine or fecal samples. *See* ''Interpretation of Bioassay Measurements, '' NUREG/CR–4884, (1987). Based on descriptions in the International Commission on Radiological Protection Publication 30, the biokinetic model for phosphorus predicts that about 80 percent of the ingested phosphorus is absorbed from the gastrointestinal tract and enters the blood stream. From there, 15 percent is assumed to go directly to excretion through urine and feces, with a half-life of 0.5 day, 15 percent goes to intracellular fluids, 40 percent is incorporated into soft tissue and 30 percent is incorporated into the skeleton. The 15 percent that goes to early excretion is considered to enter directly into the kidney/bladder compartment, from which it is eliminated within a 4-hour retention time. Because the route of Dr. Ma's intake was via ingestion, and because there is little excretion of P–32 from the systemic compartment into the feces, NIH's use of urinary excretion data and decision not to use fecal excretion data was entirely appropriate.

Although NIH did not follow ANSI N13.30, they were not required to do so. Not only was this guidance issued as a draft for public comment at the time of the event, but NRC had not endorsed its use in any NRC Regulatory Guide.[28] Moreover, ANSI N13.30 is industry-issued guidance only, and does not constitute a regulatory requirement.

Petitioners are correct in stating that early reports from NIH of July and August 1995 were not based upon full and complete data. In hindsight, the August 29, 1995, report of NIH should not have been referenced as ''final'' assessments of dose. As NRC's LLNL evaluation points out, documented intakes of P–32 demonstrate an increase in urinary output of radiation over the first few days after intake. Since the concentration of phosphorus in the systemic compartments of the body is reflected in the urine, it is reasonable to conclude that urine activity may establish an equilibrium within a few days after the intake. Therefore, the early NIH dose assessments during the first month after the incident tended to underestimate the dose because of the nature of phosphorus biokinetics and the limited usefulness of internationally-accepted models derived primarily for standard-setting. It is understandable, however, that an internal dosimetrist may have a strong desire to maintain and use the first few days of bioassay samples. Continued use of these early excretion values also provides more consistency with early dose estimates, since these early values have more statistical weight. However, at long times after an intake (i.e., 20 to 30 days for P–32), an evaluation of the entire set of data must be performed relative to the projected values. It is during this time that a reevaluation should be made regarding the validity, usability, and statistical weight of the early times after intake. NIH's last set of consultants, as well as the NRC's and Petitioners' consultants, had the advantage of retrospective insight into the data, and based on that insight, did not use the urinary excretion data from the first few days after intake.

(3) *NRC Estimates:* ORISE, serving as a scientific consultant to NRC, and using bioassay data provided by NIH, performed an assessment for NRC of the intake by, and resultant P–32 radiation Dr. Ma was exposed to, and of the radiation exposure received by her fetus. One of the major differences between the early estimates of the Licensee and NRC was NIH's use of the annual limit on intake (ALI) that was based on Reference Man [70 kilograms (kg)], versus NRC's use of an ALI based on Reference Woman (57 kg). NRC

[28] ANS N13.30, ''Performance Criteria for Radiobioassay,'' was issued as a draft standard for comment in September 1989, and was finalized in May 1996. NRC has not yet endorsed it for licensee use in any NRC Regulatory Guides.

requires licensees to calculate doses to individuals in accordance with ALIs that are based on Reference Man. See 10 CFR part 20, Appendix B, notes to Table 1, ''Occupational.'' Because NRC's understanding was that Dr. Ma weighed approximately 53 kg, the model to calculate the ALI that more appropriately represented the circumstances of Dr. Ma's contamination was Reference Woman, and consequently all NRC dose estimates were based upon that model.

Because of the differences in the results of the assessments performed by the Licensee (dated August 26, 1995) and by NRC's scientific consultant to the AIT, ORISE (dated August 9, 1995), NRC contracted with a third party, LLNL, to independently review the assessments performed by the Licensee, and by ORISE, for NRC.

Based on the work of its consultants, NRC estimates that Dr. Ma ingested between 30.3 and 48.1 MBq (820 and 1300 μCi) of P–32, an amount of P–32 in excess of the 22.2 MBq (600 μCi) annual limit specified by 10 CFR part 20, Appendix B, Table 1, Column 1. Based on these values, NRC estimates that Dr. Ma's internal CEDE was between 80 and 127 mSv (8.0 and 12.7 rem). The estimated radiation exposure received by Dr. Ma's fetus was between 51 and 81 mSv (5.1 and 8.1 rem). A more detailed discussion of NRC's dose assessment can be found in the AIT final report of January 13, 1997.

NRC also contracted with one of its medical consultants to review and characterize the safety significance of the exposures to Dr. Ma and her fetus, summarized in his final report dated September 4, 1996. Based on NRC's estimated exposures to Dr. Ma and her fetus, NRC's medical consultant concluded that no deterministic or stochastic effects to Dr. Ma, and no deterministic effects to her fetus are expected. In regard to potential stochastic consequences to the fetus, although there is moderate uncertainty in the data used for cancer risk estimation as a result of *in utero* radiation exposure, in this case, an excess risk of 0.33% is estimated (for comparative purposes, the natural risk of childhood cancers is about 0.1%). Thus the probability that the exposed fetus will **NOT** develop a radiation-induced childhood cancer is 99.67% (range 99.60 to 99.74%). It is unknown whether this risk estimate should be reduced because of the low dose and low dose-rate associated with this internal exposure from P–32.

NRC performed a review of both the NIH AIT and the MIT IIT contamination events in order to determine if NRC guidance to licensees regarding instructions for collection of excreta and analysis of fetal dose based upon maternal uptake is adequate. As a result of this review, the staff issued additional guidance to licenses on analysis of fetal doses, NUREG/CR–5631, Rev. 2, ''Contribution of Maternal Burdens to Prenatal Radiation Doses,'' (May 30, 1996).

One of NRC's scientific consultants reviewed and confirmed the NIH estimates of dose received by the 26 individuals who drank from the contaminated water cooler. NRC concluded that no deterministic or stochastic consequences are expected for any of the 26 individuals, including Dr. Zheng, who were internally contaminated with P–32.

L. Directions to Hospital Emergency Room Personnel Concerning Assessment of Dr. Ma's Level of Contamination

Petitioners state that NIH personnel gave conflicting and harmful directions to Holy Cross ER personnel, which interfered with efforts to properly assess Dr. Ma's contamination. Specifically, the NIH RSO directed the ER physician at Holy Cross to collect the total volume of urine for a 24-hour period, whereas Dr. Weinstein instructed the ER physician to aliquot a small part of the samples already taken and to discontinue efforts to collect urine over a 24-hour period, in conflict with NUREG/CR–4884, ''Interpretation of the Bioassay Measurements'' (1987). Petitioners also state that the Holy Cross ER physician did not know whose instructions to follow and so developed a compromise plan, and when Dr. Ma was released from Holy Cross, no instructions were given to her to collect her urine at any interval.

NRC concludes that the NIH RSB gave appropriate instructions, in view of the limited NRC guidance available to licensees at the time of this event regarding urine collection, *see* Section III.H., *supra*, to Dr. Ma, to the paramedics who transferred her to the hospital on June 29, 1995, and to the Holy Cross ER physician for urine collection. Additionally, the three methods for collection of Dr. Ma's urine recommended to the ER physician by the REAC/TS physician, the NIH RSO, and Dr. Weinstein were not significantly different from each other or conflicting, and the instructions given by the Holy Cross ER physician to Dr. Ma for collection of urine were appropriate for proper assessment of Dr. Ma's intake and exposure, as well as that of her fetus. *See* Section III.K.(2), *supra.* Accordingly, NRC staff cannot conclude that Dr. Ma was given inadequate or conflicting instructions.

M. NIH Notification to Dr. Ma of Her Radiation Exposure Level

Petitioners state that in violation of 10 CFR § 19.13(d), NIH deliberately failed to notify Dr. Ma of her estimated radiation exposure level at the same time such notification was provided to NRC. Specifically, the only NIH notification provided to Dr. Ma was a copy of the August 1995 ORISE report estimating her contamination at 265 μCi (9.8 MBq), despite NRC direction to NIH to make notifications required by 10 CFR § 19.13(d). As a result, before NRC's actions to estimate her intake, Dr. Ma had to learn of her exposure levels from indirect sources and consulted with an independent health physicist at great personal cost.

NRC notified NIH by letter dated December 1, 1995, from Thomas T. Martin, Regional Director for Region I, and by letter dated January 29, 1996, from Charles W. Hehl, Director, NRC Region I, Division of Nuclear Material Safety, that NIH was required to make notifications pursuant to 10 CFR § 19.13(d) regarding the estimated radiation exposure of Dr. Ma and her fetus. The December 1, 1995, letter notified NIH that Dr. Ma received a dose in excess of the applicable occupational regulatory limits, 10 CFR § 20.1201(a)(1)(i), specifically that NRC estimates her internal CEDE was between 80 and 127 mSv (8.0 and 12.7 rem) and that NRC estimates the radiation exposure received by Dr. Ma's fetus was between 51 and 81 mSv (5.1 and 8.1 rem).

By letter and facsimile dated May 15, 1997, counsel for Petitioners notified NRC that NIH had revised its dose estimates for Dr. Ma and her fetus, and Petitioners' counsel provided a copy to NRC of an NIH memorandum dated July 30, 1996, containing the revised estimates. Although this document is addressed to Dr. Ma, Petitioners' counsel state that Dr. Ma never received this memorandum and that NIH never notified her directly of her radiation dose after the accident.

NIH revised its original dose estimates after engaging an independent expert on internal dose assessment and bioassay interpretation to perform an analysis of the dose to Dr. Ma and her fetus. NIH's independent consultant completed its analysis and prepared a report to NIH dated March 4, 1996. NIH provided its memorandum dated July 30, 1996, summarizing Dr. Ma's 1995 revised radiation dose estimates for her and her fetus, to NRC at its request, on April 4, 1997, by facsimile. Based on the NIH

consultant's report, NIH revised its dose estimates to a CEDE of between 4.7 and 7.0 rem (47 and 70 mSv) to Dr. Ma, corresponding to an intake range of between 570 and 840 μCi (21.1 and 31.1 MBq), and a dose of between 3.7 and 5.4 rem (37 and 54 mSv) to Dr. Ma's fetus.

NRC regulations at 10 CFR § 19.13(d) require that NIH provide Dr. Ma with a report of her exposure data at a time not later than NIH's transmittal to NRC of NIH's report on Dr. Ma's exposure. NIH denies that it never provided Dr. Ma with the revised dose estimates. NIH states that its Area Health Physicist hand-delivered the July 30, 1996, memorandum to Dr. Ma on July 30, 1996. The Area Health Physicist states that at that time, she explained the contents of the memorandum to both Dr. Ma and Dr. Zheng, asked if they had any questions, and identified NIH personnel to contact if Petitioners had any questions. The Area Health Physicist states that Petitioners opened the envelope and read the memorandum in her presence.[29]

Accordingly, NIH did violate 10 CFR § 20.2203(a)(2)(i), because NIH did not submit a written report to NRC within 30 days after learning of the occupational dose to Dr. Ma in excess of the limits for adults in 10 CFR § 20.1201. A Notice of Violation is being issued concurrently with the issuance of this Director's Decision. However, NIH did inform Dr. Ma of its revised dose estimates on July 30, 1996, in accordance with 10 CFR § 19.13(d). Accordingly, Petitioners' request for enforcement action for violation of 10 CFR § 19.13(d) is denied.[30]

N. Declaration of Pregnancy and Minimization of Radiation Exposure to Dr. Ma

Petitioners state that, in violation of 10 CFR § 20.1208, their supervisor, Dr. Weinstein, coerced Dr. Ma to not submit a written declaration of pregnancy to the NIH RSB, even though it was her clear desire to receive maximum protection for her fetus from exposure to radiation and radioactive materials, and thus Dr. Weinstein constructively denied Dr. Ma her right to receive protection for her fetus from ionizing radiation in excess of 0.5 rem (5 mSv). Petitioners state that between June 19 and June 23, 1995, Dr. Weinstein withheld the NIH form used to file a declaration of pregnancy, and insisted that if Dr. Ma filled out the declaration form, it would ''cause trouble for the lab.'' Petitioners also state that Dr. Weinstein disagreed with the steps proposed by Petitioners to minimize radiation exposure of Dr. Ma during her pregnancy.

As a related matter, Petitioners also state that because Dr. Weinstein was in a hurry to patent the results of their research (a novel method to display more efficiently the existence of expressed genes), which would have had significant scientific and commercial value, Dr. Weinstein urged Petitioners to work tirelessly, and over a period of several weeks before the contamination incident, repeatedly requested Petitioners to terminate Dr. Ma's pregnancy. Based on the several inspections and the investigation, NRC concludes that the evidence does not substantiate Petitioners' assertions that Dr. Weinstein urged Petitioners to work tirelessly, requested Petitioners to terminate Dr. Ma's pregnancy,[31] and was in a hurry to patent the results of Petitioners' research,[32] or that the research would have had significant scientific and commercial value.[33]

Based on the inspections and investigation, NRC concludes that the evidence does not substantiate Petitioners' assertions that Dr. Weinstein, with coercion or otherwise, prevented or tried to prevent Dr. Ma from declaring, or interfered with Dr. Ma's declaration of, her pregnancy in writing,[34] or that Dr. Weinstein objected to or interfered with any measures proposed or taken by Petitioners to minimize exposure of Dr. Ma's fetus to radiation. Additionally, Petitioners both took the ''NIH Radiation Safety in the Laboratory'' training course on November 29, 1994. That training covered NIH procedures on written declarations of pregnancy for occupational workers and instructions for pregnant employees as to how to obtain the NIH form used to submit a written declaration of pregnancy. Although not required to do so, Dr. Weinstein obtained the NIH form for Petitioners and provided it to Petitioners on June 23, 1995. Dr. Ma, however, did not request the form, nor did she submit the formal declaration of her pregnancy to the NIH RSB, as provided in the materials covered in her training. In view of the above, Dr. Ma's failure to submit a written declaration of pregnancy was voluntary. Accordingly, the 5-mSv (0.5-rem) occupational exposure limit specified by 10 CFR § 20.1208(a) for the fetus of a declared pregnant worker was not applicable to Dr. Ma.

Based on the above, Petitioners' request for enforcement action against NIH for violation of 10 CFR § 20.1208 is denied.

O. Responsibility for Contamination of Dr. Ma and 26 NIH Employees

Based on the inspections and the investigation, NRC concludes that Dr. Ma and 26 NIH employees were deliberately contaminated with P–32. Dr. Ma's exposure and the exposure of one of the 26 employees contaminated by the water cooler were beyond regulatory limits, in violation of 10 CFR §§ 20.1201 and 20.1301, respectively. Neither the means of administering P–32 to Dr. Ma,[35] nor the person(s)

[29] See letter dated August 15, 1997, from Robert A. Zoon, Radiation Safety Officer, NIH, to Carl J. Paperiello, NRC, and attached ''Memorandum'' dated August 14, 1997, from Beth Reed, NIH Area Health Physicist, to Robert A. Zoon.

[30] Although there is a dispute as to whether in fact NIH notified Dr. Ma of its revised dose estimates, Dr. Ma was in fact provided with the revised NIH dose estimates from another source.

[31] In addition to the lack of evidence corroborating this assertion, there are significant inconsistencies in Dr. Ma's account of how she learned of the alleged request. In the Petition, Dr. Ma stated that in the evening, after returning from a meeting with Dr. Weinstein at NIH, Dr. Zheng informed Dr. Ma that Dr. Weinstein had made the alleged request earlier that day. Dr. Ma, however, told investigators that she learned of the alleged request during a meeting at NIH with Dr. Zheng and Dr. Weinstein, a week after Dr. Weisnstein made the alleged request to Dr. Zheng, and that Dr. Zheng had not told Dr. Ma of the request.

[32] In addition to the lack of evidence to corroborate this assertion, Petitioners made contradicatory statements regarding Dr. Weinstein's plans for publication of the results of Petitioners' research. Several days after discovery of Dr. Ma's contamination, Dr. Ma told a colleague that the Petitioners wanted to publish their research paper before obtaining a patent application (contrary to usual procedures), but that Dr. Weinstein was trying to delay publication of the reserach paper. Dr. Ma told investigators shortly afterwards that Dr. Weinstein believed that her pregnancy would prevent her from handling radioactive materials, when Dr. Weinstein had applied for a patent and was trying to get the Petitioners' research paper published. A few days later, Dr. Zheng submitted a statement to investigators asserting that over the past 3 or 4 months Dr. Weinstein had been trying to delay publication of the research paper.

[33] The Investigation indicates that the Petitioners' research, which was conducted to investigate a proposal of Dr. Weinstein, did not constitute a major scientific discovery and had little commercial value.

[34] Moreover, the investigation produced evidence that Dr. Ma was not eager to declare her pregnancy. Dr. Ma told an NIH colleague approximately 2 months before the contamination incident that she was reluctant to inform Dr. Weinstein of her pregnancy, because then she might have to stop conducting experiments involving radiation.

[35] Petitioners assert that Dr. Ma was contaminated at NIH on the evening of June 28, when she ate food that she had stored in an NIH conference room refrigerator the previous evening. Dr. Ma's contamination was discovered at approximately 6:00 p.m. on June 29. The evidence indicates that Dr. Ma was not contaminated by food she had stored in the NIH conference room refrigerator. In the evening of June 29, the NIH RSB found no radioactive contamination of the conference room refrigerator, the contents of the refrigerator, Dr. Ma's desk, the table at which Dr. Ma ate, the trash cans or containers or tables in the halls near Petitioners' lab, the lab, or Dr. Weinstein's office. On June 30, the microwave used by Dr. Ma to heat her food at NIH, and the plastic containers and the utensils

responsible for the contamination of Dr. Ma[36] and of the water cooler, which was the source of contamination to the 26 NIH employees, however, was definitively identified. In the absence of any evidence to the contrary, NRC presumes that the violations were caused by an employee(s) of NIH and that the material belonged to NIH. As explained above, NRC also concludes that the contamination of Dr. Ma and of the water cooler was not a result of the Licensee's violations of NRC requirements for security and control of radioactive material. *See* Section III. A, ''Violations of NRC requirements for security and control of licensed material'', *supra.* Normally, the exposures beyond regulatory limits in this case would be subject to significant enforcement action. However, under the circumstances of this case, the Commission has decided to exercise its enforcement discretion and not initiate formal enforcement action against NIH for these violations. Discretion is being exercised because NIH fully cooperated with the investigation, there is no evidence that NIH contributed directly or indirectly to the deliberate misuse of licensed material involved, and NIH could not reasonably foresee that an employee or employees would maliciously misuse radioactive material as was done in this case.

Accordingly, enforcement action against NIH, in addition to that already taken in the NOV and Proposed Imposition of Civil Penalty $2500 (EA 96–027) and the Order Imposing Civil Penalty $2500 (EA 96–027), is not warranted in this case for the occupational exposure of Dr. Ma beyond regulatory limits, the exposure of the member of the public beyond regulatory limits, or the contamination of the water cooler.[37]

used by Dr. Ma to eat the food she brought to NIH, were surveyed, and no contamination was found. Additionally, the evidence indicates that the P–32 contamination of the carpet in front of the conference room refrigerator occurred sometime after 5:00 p.m. on June 29. The AIT report states in the chronology that the NIH RSB initial estimated time of ingestion was noon on June 29, 1995. However, after review of the physical evidence and radiation surveys, NIH used 11:00 am, June 28, 1995, as the most probable initial ingestion time. NIH also used this initial ingestion time for the other 26 contaminated NIH individuals involved. NRC also used this initial time of ingestion in its dose estimates.

[36] The investigation produced no evidence to corroborate Petitioners' assertions that Dr. Weinstein had suggested to several people either that Petitioners already had a child in China, or that Petitioners deliberately contaminated themselves in order to terminate Dr. Ma's pregnancy.

[37] See letter from Ashok C. Thadani, Acting Deputy Executive Director for Regulatory Effectiveness, to Michael M. Gottesman, M.D., Deputy Director for Intramural Research, NIH, dated September 17, 1997.

IV. Conclusions

The following requests of Petitioners are granted in part as described above: for enforcement action against NIH for violations of NRC security and control requirements and for violation of NRC requirements related to radiation safety training, ordering radioactive materials, inventory control of radioactive materials, monitoring, and the issuance, use, and collection of dosimetry. Petitioners' request for NRC action to ensure adequate procedures and instructions to exposed persons for sample collection is granted as described above. The following requests of Petitioners for enforcement action against NIH are denied: for the exposure of Dr. Ma beyond regulatory limits, for the exposure of Dr. Ma's fetus, and for the contamination of the water cooler; regarding notification to Dr. Ma of her level of contamination; regarding Dr. Ma's declaration of pregnancy; regarding the conduct of surveys after Dr. Ma's contamination; and for the failure to accurately calculate Dr. Ma's occupational radiation dose. Finally, Petitioners' request to suspend or revoke the NIH license is denied.

A copy of this Decision will be filed with the Secretary of the Commission for Commission review in accordance with 10 CFR § 2.206(c) of the Commission's regulations. As provided by this regulation, the Decision will constitute the final action of the Commission 25 days after issuance, unless the Commission, on its own motion, institutes a review of the Decision within that time.

This 17th day of September 1997, Rockville, Maryland.

Carl J. Paperiello,

Director, Office of Nuclear Material Safety and Safeguards.

[FR Doc. 97–25318 Filed 9–23–97; 8:45 am]

BILLING CODE 7590–01–P

SECURITIES AND EXCHANGE COMMISSION

Request for Public Comment

Upon Written Request, Copies Available From: Securities and Exchange Commission, Office of Filings and Information Services, Washington, DC 20549.

Extension: Rule 13e–1, SEC File No. 270–255, OMB Control No. 3235–0305. Rule 12g3–2, SEC File No. 270–104, OMB Control No. 3235–0119, Trust Indenture Act Rules, SEC File No. 270–115, OMB Control No. 3235–0132.

Notice is hereby given that pursuant to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.), the Securities and Exchange Commission (''Commission'') is soliciting comments on the collections of information summarized below. The Commission plans to submit these existing collections of information to the Office of Management and Budget for extension and approval:

''Purchase of Securities by issuer thereof under the Securities Exchange Act of 1934''. Rule 13e–1 under the Exchange Act is designed to provide shareholders and the marketplace with relevant information concerning issuer repurchases during a tender offer for its securities by a third party. Public companies are the respondents. An estimated 20 respondents wiil file submissions annually at and estimated 13 hours per response for a total annual burden of 260 hours.

''Securities Exchange Act of 1934—Rule 12g3–2.'' Rule 12g3–2 provides an exemption for certain foreign securities. It affects approximately 1800 foreign issuer respondents at an estimated one burden hour per response for a total annual burden of 1800 hours.

''Requirements as to Form and Content of Applications, Statements and Reports under the Trust Indenture Act of 1939.'' Rules 7a–15 through 7a–37 under the Trust Indenture Act of 1939 (''TIA'') provides guidance for complying with requirements under the TIA. Persons and entities subject to TIA requirements are the respondents. No information collection burdens are imposed directly by these rules so they are assigned only one burden hour for administrative convenience.

Written comments are invited on: (a) Whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information will have practical utility; (b) the accuracy of the agency's estimate of the burden of the collection of information; (c) ways to enhance the quality, utility, and clarity of the information collected; and (d) ways to minimize the burden of the collection of information on respondents, including through the use of automated collection techniques or other forms of information technology. Consideration will be given to comments and suggestions submitted in writing on or before November 24, 1997.

Please direct your written comments to Michael E. Bartell, Associate Executive Director, Office of Information Technology, Securities and Exchange Commission, 450 5th Street, N.W., Washington, DC 20549.

Dated: September 16, 1997.

Margaret H. McFarland,

Deputy Secretary.

[FR Doc. 97–25322 Filed 9–23–97; 8:45 am]

BILLING CODE 8010–01–M

SECURITIES AND EXCHANGE COMMISSION

Submission for OMB Review; Comment Request

Upon Written Request, Copies Available From: Securities and Exchange Commission, Office of Filings and Information Services, Washington, DC 20549.

Extension: Rule 17f–6, SEC File No. 270–392, OMB Control No. 3235–0447. Rule 2a19–1, SEC File No. 270–294, OMB Control No. 3235–0332. Rule 17f–2, SEC File No. 270–233, OMB Control No. 3235–0223.

Notice is hereby given that, pursuant to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 *et seq.*), the Securities and Exchange Commission (''Commission'') has submitted to the Office of Management and Budget requests for extension of the previously approved collections of information discussed below.

Rule 17f–6 under the Investment Company Act of 1940 (''Act'') permits registered investment companies (''funds'') to maintain assets (i.e., margin) with futures commission merchants (''FCMs'') in connection with commodity transactions effected on both domestic and foreign exchanges.[1] Prior to the adoption of the rule, funds generally were required to maintain such assets in special accounts with a custodian bank.

Rule 17f–6 permits funds to maintain their assets with FCMs that are registered under the Commodity Exchange Act (''CEA'') and that are not affiliated with the fund. The rule requires that the manner in which the FCM maintains a fund's assets be governed by a written contract, which must contain certain provisions. First, the contract must provide that the FCM must comply with the segregation requirements of section 4d(2) of the CEA [7 U.S.C. 6d(2)] and the rules thereunder [17 CFR Chapter I] or, if applicable, the secured amount requirements of rule 30.7 under the CEA [17 CFR 30.7]. Second, the contract must provide that when placing the fund's margin with another entity for clearing purposes, the FCM must obtain an acknowledgment that the fund's assets are held on behalf of the FCM's customers in accordance with provisions under the CEA. Lastly, the contract must require the FCM, upon request, to furnish records on the fund's assets to the Commission or its staff.

The requirement of a written contract that contains certain provisions ensure important safeguards and other benefits relative to the custody of investment company assets by FCMs. For example, requiring FCMs upon request to furnish to the Commission or its staff information concerning the investment company's assets facilitates Commission inspections of investment companies. The contract requirement governing transfers of investment company margin seeks to accommodate the legitimate needs of the participants in the commodity settlement process, consistent with the safekeeping of investment company assets. The contract requirement requiring FCMs to comply with the segregation or secured amount requirements of the CEA and the rules thereunder is designed to safeguard fund assets held by FCMs.

The Commission estimates that approximately 2,000 investment companies could deposit margin with FCMs under rule 17f–6 in connection with their investments in futures contracts and commodity options. It is estimated that each investment company uses and deposits margin with 3 different FCMs in connection with its commodity transactions. Approximately 241 FCMs are eligible to hold investment company margin under the rule.[2]

The only paperwork burden of the rule consists of meeting the rule's contract requirements. The Commission estimates that after the first year, 2,000 investment companies will spend an average of 1 hour complying with the contract requirements of the rule (e.g., signing contracts with additional FCMs), for a total of 2,000 burden hours. The Commission estimates that each of the 241 FCMs eligible to hold investment company margin under the rule will spend 2 hours complying with the rule's contract requirements, for a total of 482 burden hours. The total annual burden for the rule are estimated to be 2,482 hours.

Rule 2a19–1 under the Act provides that investment company directors will not be considered interested persons, as defined by section 2(a) (19) of the Act, solely because they are registered broker-dealers or affiliated persons of registered broker-dealers, provided that the broker-dealer does not execute any portfolio transactions for the company's complex, engage in any principal transactions with the complex or distribute shares for the complex for at least six months prior to the time that the director is to be considered not to be an interested person and for the period during which the director continues to be considered not to be an interested person. The rule also requires the investment company's board of directors to determine that the company would not be adversely affected by refraining from business with the broker-dealer. In addition, the rule provides that no more than a minority of the disinterested directors of the company may be registered broker-dealers or their affiliates.

Before the adoption of rule 2a19–1, many investment companies found it necessary to file with the Commission applications for orders exempting directors from section 2(a)(19) of the Act. Rule 2a19–1 is intended to alleviate the burdens on the investment company industry of filing for such orders in circumstances where there is no potential conflict of interest. The conditions of the rule are designed to indicate whether the director has a stake in the broker-dealer's business with the company such that he or she might not be able to act independently of the company's management.

It is estimated that approximately 3,200 investment companies may choose to rely on the rule, and each investment company may spend one hour annually compiling and keeping records related to the requirements of the rule. The total annual burden associated with the rule is estimated to be 3,200 hours.

Rule 17f–2, under the Act, establishes safeguards for arrangements in which a registered management investment company is deemed to maintain custody of its own assets, such as when the fund maintains its assets in a facility that provides safekeeping but not custodial services. The rule includes several recordkeeping or reporting requirements. The funds directors must prepare a resolution designating not more than five fund officers or responsible employees who may have access to the fund's assets. The designated access persons (two or more of whom must act jointly when handling fund assets) must prepare a written notation providing certain information about each deposit or withdrawal of fund assets, and must transmit the notation to another officer or director designated by the directors. Independent public accountants must verify the fund's assets without prior notice to the fund twice each year.

[1] Custody of Investment Company Assets With Futures Commission Merchants and Commodity Clearing Organizations, Investment Company Act Release No. 22389 (Dec. 11, 1996) (61 FR 66207 (Dec. 17, 1996)).

[2] Commodity Futures Trading Commission, Annual Report (1996).

The requirement that directors designate access persons is intended to ensure that directors evaluate the trustworthiness of insiders who handle fund assets. The requirements that access persons act jointly in handling fund assets, prepare a written notation of each transaction, and transmit the notation to another designated person are intended to reduce the risk of misappropriation of the fund assets by access persons, and to ensure that adequate records are prepared, reviewed by a responsible third person, and available for examination by the Commission.

The Commission estimates that approximately 110 funds rely upon the rule (and that each fund offers an average of two separate series or portfolios subject to the rule). It is estimated that each fund spends approximately 2 hours annually in drafting pertinent resolutions by directors, 24 hours annually in preparing transaction notations, and 100 hours annually in performing unscheduled verifications of assets. Therefore, the total annual burden associated with this rule is estimated to be 13,860 hours.

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid control number.

Written comments regarding the above information should be directed to the following persons: (i) Desk Officer for the Securities and Exchange Commission, Office of Information and Regulatory Affairs, Office of Management and Budget, Room 3208, New Executive Office Building, Washington, D.C. 20503; and (ii) Michael E. Bartell, Associate Executive Director, Office of Information Technology, Securities and Exchange Commission, 450 Fifth Street, N.W., Washington, D.C. 20549. Comments must be submitted to OMB on or before October 24, 1997.

Dated: September 17, 1997.

Margaret H. McFarland,

Deputy Secretary.

[FR Doc. 97–25320 Filed 9–23–97; 8:45 am]

BILLING CODE 8010–01–M

SECURITIES AND EXCHANGE COMMISSION

Submission for OMB Review; Comment Request

Upon Written Request, Copies Available From: Securities and Exchange Commission, Office of Filings and Information Services, Washington, DC 20549.

Extension: Form 2–E and Rule 609, SEC File No. 270–222, OMB Control No. 3235–0233. Rule 6c–7, SEC File No. 270–269, OMB Control No. 3235–0276. Rule 11a–2, SEC File No. 270–267, OMB Control No. 3235–0272.

Notice is hereby given that, pursuant to the Paperwork Reduction Act of 1995 (44 U.S.C. 3501 et seq.), the Securities and Exchange Commission (''Commission'') has submitted to the Office of Management and Budget requests for extension of the previously approved collections of information discussed below.

Form 2–E is used, pursuant to Rule 609 of Regulation E under the Securities Act of 1933, by small business investment companies or business development companies engaged in limited offerings of securities to report semi-annually the progress of an offering, including the number of shares sold. The form solicits information such as the dates an offering has commenced and completed, the number of shares sold and still being offered, amounts received in the offering, and expenses and underwriting discounts incurred in the offering. This information assists the Commission staff in determining whether the issuer has stayed within the limits of an exemptive offering.

Form 2–E must be filed semi-annually during an offering and as a final report at the completion of the offering. Less frequent filing would not allow the Commission to monitor the progress of the limited offering in order to ensure that the issuer was not attempting to avoid the normal registration provisions of the securities laws.

There has been approximately one filing on form 2–E under rule 609 of regulation E during each of the last two years. On average, approximately one respondent spends four hours collecting information, preparing, and filing a form 2–E for a total annual reporting and recordkeeping burden of four hours.

Rule 6c–7 under the Investment Company Act of 1940 (''1940 Act'') provides exemption from certain provisions of Sections 22(e) and 27 of the 1940 Act for registered separate accounts offering variable annuity contracts to certain employees of Texas institutions of higher education participating in the Texas Optional Retirement Program.

There are approximately 183 registrants governed by Rule 6c–7, with an estimated compliance time of 30 minutes per registrant for a total of 92 annual burden hours.

Rule 11a–2 permits certain registered insurance company separate accounts, subject to certain conditions, to make offers to exchange their securities for other investment company securities without obtaining prior Commission approval.

There are approximately 550 registrants governed by Rule 11a–2, with an estimated compliance time of 15 minutes per registrant for a total of 138 annual burden hours.

An agency may not conduct or sponsor, and a person is not required to respond to, a collection of information unless it displays a currently valid control number.

Written comments regarding the above information should be directed to the following persons: (i) Desk Officer for the Securities and Exchange Commission, Office of Information and Regulatory Affairs, Office of Management and Budget, Room 3208, New Executive Office Building, Washington, D.C. 20503; and (ii) Michael E. Bartell, Associate Executive Director, Office of Information Technology, Securities and Exchange Commission, 450 Fifth Street, N.W., Washington, D.C. 20549. Comments must be submitted to OMB on or before October 24, 1997.

Dated: September 18, 1997.

Margaret H. McFarland,

Deputy Secretary.

[FR Doc. 97–25323 Filed 9–23–97; 8:45 am]

BILLING CODE 8010–01–M

SECURITIES AND EXCHANGE COMMISSION

Sunshine Act Meeting

Notice is hereby given, pursuant to the provisions of the Government in the Sunshine Act, Pub. L. 94–409, that the Securities and Exchange Commission will hold the following meeting during the week of September 29, 1997.

A closed meeting will be held on Monday, September 29, 1997, at 11:00 a.m.

Commissioners, Counsel to the Commissioners, the Secretary to the Commission, and recording secretaries will attend the closed meeting. Certain staff members who have an interest in the matters may also be present.

The General Counsel of the Commission, or his designee, has certified that, in his opinion, one or more of the exemptions set forth in 5 U.S.C. 552b(c) (4), (8), (9)(A) and (10), permit consideration of the scheduled matters at the closed meeting.

Commissioner Hunt, as duty officer, voted to consider the items listed for the closed meeting in a closed session.

The subject matter of the closed meeting scheduled for Monday, September 29, 1997, at 11:00 a.m., will be:

Institution and settlement of injunctive actions.
Institution and settlement of administrative proceedings of an enforcement nature.
Formal orders of investigation.

At times, changes in Commission priorities require alterations in the scheduling of meeting items. For further information and to ascertain what, if any, matters have been added, deleted or postponed, pleased contact: The Office of the Secretary at (202) 942–7070.

Dated: September 22, 1997.

Margaret H. McFarland,

Deputy Secretary.

[FR Doc. 97–25463 Filed 9–22–97; 8:45 am]

BILLING CODE 8010–01–M

SECURITIES AND EXCHANGE COMMISSION

[Release No. 34–39086; File No. SR–PCX–97–18]

Self-Regulatory Organizations; Pacific Exchange, Inc.; Order Approving Proposed Rule Change and Notice of Filing and Order Granting Accelerated Approval of Amendment Numbers 1, 2 and 3 to Proposed Rule Change Relating to the PCX Application of the OptiMark System

September 17, 1997.

I. Introduction

On June 11, 1997, the Pacific Exchange, Inc. (''PCX'' or ''Exchange'') submitted to the Securities and Exchange Commission (''SEC'' or ''Commission''), pursuant to Section 19(b) of the Securities Exchange Act of 1934 (''Act'') [1] and Rule 19b–4 thereunder,[2] a proposed rule change to establish rules for a new exchange facility called the PCX Application of the OptiMark System (''PCX Application'' or ''Application''). Notice of the proposed rule change appeared in the **Federal Register** on June 19, 1997.[3] Fourteen comment letters were received in response to the proposal.[4] On August 1, 1997, PCX submitted an amendment (''Amendment No. 1'') to the proposal, as well as two letters containing supplemental information.[5] On August 29, 1997, PCX submitted a second amendment (''Amendment No. 2'') to the proposal.[6] On September 16, 1997, PCX submitted a third amendment (''Amendment No. 3'') to the proposal.[7] This order approves PCX's proposal, as amended.

II. Description of the Proposal

A. Summary of the PCX Application and Purpose

The Exchange proposes to establish rules for a new exchange facility called the PCX Application of the OptiMark System. The PCX Application of the ''OptiMark System'' [8] is a computerized, screen-based trading service intended for use by Exchange members and their customers. The OptiMark System would provide automatic order formulation, matching, and execution capabilities in the equity securities listed or traded on the Exchange (''PCX Securities''). The OptiMark System would be used in addition to PCX's traditional floor facilities, to buy and sell PCX Securities.[9]

Specifically, the Application would allow PCX members and their customers to submit anonymously from their computer terminals ranges of the trading interest to the OptiMark Systems. At specified times during the trading day, the OptiMark System would conduct certain calculations against such expressions of interest to identify specific orders capable of execution. All orders formulated by the OptiMark System would be automatically executed on the Exchange, except to the extent that they are executed on other market centers through the Intermarket Trading System (''ITS''). The Exchange has stated that the proposed facility would meet institutional investors' growing demand for a new trading medium. The Exchange also expects retail investors to benefit from the operation of the PCX Application.

B. Description of the Proposed PCX Application Operation

The PCX Application was developed jointly by the Exchange and OTI. Exchange members and their customers will trade on the OptiMark System in the manner described below:

Proposed Method of Operation

Two distinct operations would be involved in running the PCX Application: (i) The central information processing system and related administrative and communications

---

[1] The Exchange originally submitted this filing to the SEC on May 20, 1997. On June 3, 1997, the Exchange submitted Amendment No. 1 to the filing. The Exchange resubmitted the entire filing on June 11, 1997. The resubmitted filing incorporates the substance of the June 3, 1997, Amendment No. 1. All subsequent references in this order to ''Amendment No. 1'' refer to the amendment, dated Aug. 1, 1997, submitted as an amendment to the June 11, 1997 filing. *See* note 5, *infra*.

[2] 17 CFR 240.19b–4.

[3] *See* Securities Exchange Act Release No. 38740 (June 13, 1997), 62 FR 33448 (June 19, 1997).

[4] Comment letters to the Commission were received from Thomas D. Burke, Newbridge Securities, Inc., dated July 1, 1997; Steven A. Denning, General Atlantic Partners, dated July 2, 1997; Theodore E. James, Jr., Van Kasper & Company, dated July 3, 1997; Junius W. Peake, University of Northern Colorado, dated July 7, 1997; Theodore R. Aronson, Aronson & Partners, dated July 7, 1997; Praveen K. Gottipalli, Symphony Asset Management, dated July 8, 1997; Robert A. Hill, Melvin Specialists, Inc., dated July 9, 1997; Tim McCarthy, Charles Schwab, dated July 10, 1997; Todd Greenberg, ProActive Capital Management, dated July 10, 1997; Matt Fong, Treasurer, State of California, dated July 10, 1997; Harold S. Bradley, American Century Investment Management, Inc., dated July 15, 1997; James E. Buck, New York Stock Exchange, Inc. (''NYSE''), dated July 15, 1997; Tom C. Tinsley, Baan Company, N.V., dated July 17, 1997; Bill Porter and Christos M. Cotsakos, E*Trade Group, Inc., dated July 21, 1997.

[5] Letter from John C. Katovich, Senior Vice President, General Counsel, and Director of Legal Affairs, PCX, to Michael Walinskas, Senior Special Counsel, Division of Market Regulation, SEC, dated Aug. 1, 1997. In Amendment No. 1, PCX made a technical amendment to its short sale rule, and provided clarification regarding the application of Rule 10a–1 under the Act to short sales in the PCX Application. Also in Amendment No. 1, PCX responded to comments made by the NYSE.

[6] Letter from John C. Katovich, Senior Vice President, General Counsel, and Director of Legal Affairs, PCX, to Michael Walinskas, Senior Special Counsel, Division of Market Regulation, SEC, dated Aug. 29, 1997. In addition to Amendment No. 2, the PCX also submitted two letters containing supplemental information. *See* Letter from John C. Katovich, Senior Vice President, General Counsel, and Director of Legal Affairs, PCX, to Michael Walinskas, Senior Special Counsel, Division of Market Regulation, SEC, dated Aug. 29, 1997 (regarding issues related to the Intermarket Trading System) (''PCX ITS Letter''), and Letter from John C. Katovich, Senior Vice President, General Counsel, and Director of Legal Affairs, PCX, to Michael Walinskas, Senior Special Counsel, Division of Market Regulation, SEC, dated Aug. 29, 1997 (regarding interaction of the PCX Application with the PCX floor) (''PCX Floor Letter'').

[7] Memorandum from John C. Katovich, Senior Vice President, General Counsel, and Director of Legal Affairs, PCX, to Michael Walinskas, Senior Special Counsel, Division of Market Regulation, SEC, dated Sept. 16, 1997. In Amendment No. 3, PCX clarified the manner in which Primary Market Protection (''PMP'') orders will be executed once the Application is implemented. The letter also includes several trading scenarios that illustrate the operation of the Application vis-a-vis PCX specialists.

[8] The OptiMark System was developed by OptiMark Technologies, Inc. (''OTI''), a computer technology firm located in Durango, Colorado, based on certain patent-pending technology referred to as ''OptiMark™.'' OTI has represented that the PCX Application is expected to be one of several different trading services based on that technology that will be made available from the OptiMark System for other exchanges and markets in the future. OTI expects its wholly-owned subsidiary, OptiMark Servicers, Inc. (''OSI''), which currently plans to apply for registration as a broker-dealer, to be responsible for operating portions of the PCX Application for the Exchange and delivering the trading service to the Exchange's members and their customers. OTI is licensing the OptiMark System to OSI for purposes of the PCX Application.

[9] This rule filing addresses trading in PCX Securities only. PCX represents that if and when it proposes to extend the Application to options or other types of securities listed or traded on the Exchange, a rule change proposal will first be filed with the Commission.

terminal network of the OptiMark System, which includes computers that collect and process data, log activities, and switch messages from and to other systems and carriers, as well as the communication network linking such computers with customer terminals; and (ii) the computer hardware and software needed (collectively, the ''PCX Interfaces'') for the OptiMark System to communicate with PCX's computerized order system (including any terminals in use by PCX specialists or floor brokers). The Exchange would continue to operate its electronic linkages with the ITS, Consolidated Quote System (''CQS''), and the Consolidated Tape System (''CTS''), as they currently exist.

The Exchange would have direct ownership of and control over the PCX Interfaces. The OptiMark System would provide such electronic communications and information services needed for the PCX Application to operate. From time to time, various services provided by the OptiMark System would be modified to allow for system improvement and enhancement. The Exchange would assure that, at all relevant times, the material terms and conditions of the PCX Application would comply fully with the applicable rules of the Exchange.

Access to the PCX Application

The PCX Application would be available to all members of PCX and, through them, to non-members such as institutional investors and other non-member broker-dealers. Each interested member and non-member customer would be eligible to enter into a subscription agreement (''User Agreement'') with OTI and also to execute an agreement with OSI authorizing the delivery of the trading service made available from the OptiMark System.

The OptiMark System subscribers (''Users'') would log in from their own computer terminals and communicate with the OptiMark System over customary commercial information services and networks of their choice. Those Users that serve as specialists and floor brokers on the Exchange could also communicate with the OptiMark System from certain computer terminals located on the floor of the Exchange. Security codes and protocols would be required to log in to the OptiMark System. Once logged in, Users with authorized access to the PCX Application would be able to submit certain expressions of their trading interest in a PCX Security to the OptiMark System. Users would be responsible for all of such expressions and any other messages submitted to the OptiMark System under their passwords and security codes.

Under PCX's proposal, each member of the Exchange would be granted access to the PCX Application directly as a User. Any orders formulated and matched by the OptiMark System based on the expressions of trading interest received from a member User would be automatically routed, executed and reported in that User's name. Each such member User would be responsible for all transactions resulting from the PCX Application for its own or customer accounts in the same way that it is currently responsible for transactions on the floor.

Non-member Users would be required to designate in advance member firms (''Designated Brokers'') that would authorize their access to the PCX Application. Under a non-member's agreement with a Designed Broker (''Give-Up Agreement''), the Designated Broker would accept responsibility for that non-member User's transactions and provide a written statement to the Exchange to that effect. Under the Designated Broker's agreement with OSI (''Transmission Consent Agreement''), the Designated Broker would authorize any and all orders formulated and matched by the OptiMark System based on the expressions of trading interest received from the non-member User to be automatically routed, executed and reported in the Designated Broker's name. Both agreements must be in force before any non-member User may be given access to the PCX Application. At a minimum, the provisions in these agreements would include any credit limits that may be imposed by a Designated Broker (or its clearing broker if applicable) on a non-member User; [10] the Designated Broker's undertaking that it is responsible for the non-member User's transactions; and such other terms and conditions that may be agreed to from time to time.

Entry of Profiles

Under PCX's proposal, a User would submit an expression of its trading interest in the form of a ''satisfaction profile'' (''Profile''), which would indicate the User's degree of satisfaction or willingness (expressed as a number between zero and one) to trade at each coordinate of a price/size grid. A User may depict a varying degree of its trading preferences, covering a range of prices and sizes, in a Profile.

The price/size grid over which Profiles are entered would be unitized into individual coordinates. The price axis would be divided into the minimum trading increments in the relevant security being traded.[11] The size axis would be divided into 1,000 share increments. A User could create a three-dimensional Profile over each coordinate in the desired region of the price/size grid by indicating a degree of willingness (a ''satisfaction value'') to trade at that coordinate. Such willingness to trade or satisfaction value could range from the most satisfactory (*i.e.*, ''1'' satisfaction value) to a cut-off point at which a transaction at that price and size becomes undesirable (*i.e.*, ''0'' satisfaction value).

The delineation of the size axis into 1,000 share increments for purposes of defining a Profile is distinguishable from the minimum units of trading in the PCX Application, which are in round lots. An example provided in the Exchange's proposal would be a User seeking to submit a buy Profile for 4,100 shares that shows a 100% willingness to trade at the price of 20, decreasing to no willingness as the price reaches 22. Because of the 1,000 share increments on the size axis, the User's interest in excess of 4,000 shares (*i.e.*, the 100 shares) would be reflected in the next available higher coordinate size—5,000. To draw this Profile on the grid, the User would assign the satisfaction value of 1 to all the coordinates with the associated size of 5,000 shares or less and price of 20 or below. As the associated price increases from 20 to 22, the satisfaction value of the relevant coordinates would decrease steadily down to 0. According to the Exchange, the grid size of 5,000 shares does not mean that the User actually would receive a 5,000 share trade in excess of the desired amount, because the User could enter an instruction as part of the Profile to limit the transaction size to 4,100 shares.

According to the proposal, each User may specify, with respect to each Profile submitted, an associated maximum quantity of shares in any round lot multiples starting at 1,000 shares; provided, however, those Profiles submitted by PCX specialists and certain system-generated CQS Profiles (as discussed below) would each have the associated round lot size reflected in the relevant limit order book or

[10] A non-member User's credit limits, as they may be established from time to time by a Designated Broker (or its clearing broker if applicable), will be programmed into the OptiMark System. In addition, the Designated Broker will be notified as its potential exposure to its customers, individually or in the aggregate, approaches the established credit limits.

[11] PCX recently amended its rules in order to trade equity securities in minimum increments of 1/16 of a dollar. *See* Securities Exchange Act Release No. 38780 (June 26, 1997), 62 FR 36087 (July 3, 1997).

quotation, which may be less than 1,000 shares. In addition, Users may, at their option, set boundary conditions on a Profile to restrict the total number of shares that may be purchased or sold within any particular price or size range. Similarly, Users may, at their option, place restrictions on any potential purchase or sale of shares through the ITS.

Users would submit Profiles through their own computers or computers on the floor of the Exchange. All Profiles received by the Application from a User would be treated confidentially and would be viewed only by that User. Unlike orders entered on the Exchange's traditional floor facilities, Profiles would not be widely disseminated to elicit any trading interest when they are received. Instead, they would be logged and maintained by the OptiMark System until they are centrally processed. As discussed further below, Profiles would not be executable outside of the specified times. As trading interest contingent upon such periodic processing, Profiles received by and kept within the OptiMark System would have no standing against orders on the floor and no bearing on the Exchange's traditional auction-pricing mechanism.

The Exchange has represented that, in accordance with its general audit trail requirements, all Profiles submitted by Users would be appropriately marked as proprietary or agency. In addition, each would be time-stamped with a unique serial number when received by the OptiMark System.[12] Users would be able to revise or cancel their own Profiles at any time prior to commencement of the next scheduled central processing. According to the Exchange, because it would be important for Users to be able to adjust their outstanding Profiles in a timely manner in response to sudden market developments, adjustments would be processed in the next central processing scheduled to take place more than one second after receipt. Submitting a revised Profile would result in a new time stamp, unless the only change made is a reduction in the maximum quantity of shares previously specified.

According to the Exchange, all Users would be held responsible for the terms and conditions contained in their Profiles. Each User would assume any and all responsibility for canceling or revising its Profile. Users would be able to specify in advance whether to cancel their outstanding Profiles or to keep such Profiles active in the event of an unexpected interruption experienced in their own telecommunications linkage to the OptiMark System. If a User decided to keep its Profile active, it would be accountable for any and all transactions resulting from the PCX Application based on such Profile.

Under PCX's proposal, the first match in a Cycle (as defined below), if it involves a short sale, will only be effected if it meets the requirements of Rule 10a–1 under the Act,[13] *i.e.*, if it is at a price above the last sale price reported on a consolidated transaction reporting system immediately prior to commencement of the Cycle, or at the last reported price if such price is above the next preceding different price. After the first transaction in the Cycle, short sale orders will only be executed at a price: (i) Above the price of the immediately preceding match within the Cycle, or (ii) equal to the immediately preceding price if such price is above the next preceding different price. PCX has requested an exemption from Rule 10a–1, the Commission's short sale rule, to permit matches within a Cycle (those subsequent to the initial match) to utilize the immediately prior match as a reference trade for determining short sale rule compliance.[14]

The OptiMark System would perform the necessary credit verification procedures on each Profile submitted by a non-member User. Such procedures would ensure that the maximum absolute dollar value of each Profile received by the OptiMark System, when added to the non-member Users' current credit usage, is consistent with the applicable credit limits. All Profiles not meeting the credit validation requirement would be deactivated.

Interaction With Existing Market Interest

According to the Exchange, the PCX Application is designed to provide Users with certain automated access to and interaction with quotations emanating from other participating market centers of the ITS. At the specified times during the trading day when central processing by the Opti-Mark System is scheduled to occur, the prevailing bid and offer quotations in CQS from each such market that may be reached by ITS, including the Intermarket Trading System/Computer Assisted Execution System interface (''ITS/CAES''), would be transformed into a pair of buy and sell Profiles (''CQS Profiles''). Each CQS Profile would have, for the relevant limit price and size, a satisfaction of 1 for all the corresponding coordinates in the price/size grid. The Exchange has represented that creation of these CQS Profiles and their interaction with the Profiles submitted by Users would ensure that the PCX Application is consistent with the intermarket price protection requirement under the ITS Plan.

According to the Exchange's proposal, the PCX Application is also designed to serve as an additional trading service for the Exchange specialists and floor brokers to use in handling existing market interest on the floor. In their capacity as Users, the specialists and floor brokers would be able to submit Profiles based on their customer limit orders. The PCX specialists would be provided with a uniquely designed electronic interface at their posts that would provide simple retrieval instructions to facilitate designation of customer orders on their limit order books for inclusion as Profiles in the OptiMark System. Such an interface also would permit PCX specialists to revise and/or cancel the relevant Profile if any of the limit orders reflected in the Profile subsequently became executable against some other market interest. The Profiles created from a PCX specialist's book would be treated the same as any other Profiles submitted by Users of the OptiMark System.[15] Similarly, floor brokers would have the ability to use existing terminals or designated OptiMark System terminals on the trading floor to submit Profiles if they wish to use the PCX Application to fill existing customer interest.

Central Processing

All Profiles received by the OptiMark System (including CQS Profiles) for each relevant security would be centrally processed by computer at one or more specified times during the trading day in order to generate one or more orders of identified prices and sizes at which execution may occur immediately (''orders''). Such

[12] PCX would have access to all non-member trade information held by a member in order to perform surveillance. Telephone conversation between John C. Katovich, Senior Vice President, General Counsel, and Director of Legal Affairs, PCX, and Michael Walinskas, Senior Special Counsel, Division of Market Regulation, SEC, Sept. 4, 1997.

[13] 17 CFR 240.10a–1.

[14] Letter from John C. Katovich, Senior Vice President, General Counsel, and Director of Legal Affairs, PCX, to Richard R. Lindsey, Director, Division of Market Regulation, SEC, dated August 29, 1997.

[15] According to the Exchange, the PCX specialists may also submit Profiles based on their own proprietary trading strategies, in addition to Profiles reflecting public limit orders on their books. To the extent that a PCX specialist chooses to represent a proprietary trading interest in its designated security by submitting a Profile, that particular Profile will have lower time priority than that of the Profile submitted by any other User in the security, thereby preventing the specialist from trading ahead of any agency orders submitted by Users. Time priorities are discussed below.

processing would involve a series of high-speed calculations (''Cycle''). Cycles would be based on a computer algorithm that is designed to measure and rank all relevant mutual satisfaction outcomes by matching individual coordinates from intersecting Buy Profiles and Sell Profiles. The matching algorithm of the OptiMark System is intended to compute optimal trade results for Users based on their different willingness to trade across a wide range of price and size. A buy coordinate and a sell coordinate, each with a full satisfaction value of 1, would be matched, based on price, standing, time of entry, and size. If one or both coordinates have a partial satisfaction value of less than 1 (but greater than 0), they would be matched, generally based on the mutual satisfaction value—that is, the product of the specific satisfaction values associated with the buy coordinate and sell coordinate.

The Exchange has represented that Profiles would be processed according to the following terms concerning matching eligibility restrictions and priority principles:

1. *Eligibility Restrictions.* At commencement of a Cycle, each individual coordinate with a non-zero satisfaction value from all buy Profiles and all sell Profiles received by the OptiMark System (including CQS Profiles) in a given PCX Security would be grouped into the Buy Profile Data Base or the Sell Profile Data Base, respectively. Each individual coordinate, no matter how small or large in the corresponding size, from either Profile Data Base would be eligible to be matched with one or more coordinates from the other Profile Data Base and would result in one or more orders, provided that:

1.1 No buy and sell coordinates could be matched in violation of any applicable User instructions for the respective Profiles, including: (a) The maximum quantity associated with the Profile, (b) any boundary conditions restricting the aggregate number of shares that may be bought or sold at a particular price or size range, and (c) the restrictions on any potential sale or purchase through ITS; and

1.2 No buy and sell coodinates could be matched from contra CQS Profiles.

1.3 No buy and sell coordinates could be matched at a price inferior to that of another coordinate with standing (as defined below) that is eligible for matching. A buy (sell) coordinate has Standing if: (a) It has 1 satisfaction value and (b) all coordinates having the same price and a smaller size, down to and including the minimum trading increment (100 shares), are included in the associated Profile at 1 satisfaction value; provided, however, that no coordinate from a Profile containing any boundary conditions restricting the aggregate number of shares that may be bought or sold at a particular size range has Standing. Each coordinate from a CQS Profile would have Standing. By contrast, no coordinate from a Profile submitted by a User on an ''all-or-none'' basis would have Standing.

2. *Priority Principles.* The methods for considering potential matches between buy and sell coordinates in the Profile Data Bases would vary, depending on whether both coordinates represent satisfaction values of 1 or less than 1. As a result, these would be two separate stages of a Cycle:

2.1 *Aggregation Stage.* The OptiMark System initially would process eligible buy and sell coordinates in the Profile Data Bases, each with the full satisfaction value of 1 only. At this stage of calculation (''Aggregation Stage''), smaller-sized coordinates may be aggregated to build sufficient size to be matched with larger-sized coordinates to generate orders in accordance with the following rules of priority, subject to the applicable eligibility restrictions:

(A) *Price aggressiveness.* A coordinate with a more aggressive price (*i.e.,* a higher price for a buy coordinate and a lower price for a sell coordinate) would have priority over coordinates with less aggressive prices.

(B) *Standing.* Among the coordinates with the same price, a coordinate with Standing would have priority over all other coordinates without Standing.

(C) *Time of entry.* Among the coordinates with the same price and Standing, the time of the entry of the associated Profile would determine relative priority, with earlier submissions having priority. All Profiles submitted by Users would be appropriately time-stamped with a unique serial number when received by the OptiMark System; provided, however, that the effective time of entry for any Profile submitted by a PCX specialist representing proprietary trading interest in the specialist's designated security would fall behind that of a Profile submitted by any other User for that security. Because each CQS Profile would be generated from the relevant market's most current quotation prevailing at the time of commencement of a Cycle, the effective time of entry of a CQS Profile would be later than that of any other Profile submitted by a User, including a PCX specialist's proprietary trading in the specialist's designated security.[16]

(D) *Size.* Among the coordinates with the same price, standing and time of entry, priority would be determined by size, with larger sizes having higher priority.

2.2 *Accumulation Stage.* Upon completion of the Aggregation Stage, the OptiMark System would consider potential matches between eligible buy coordinates and sell coordinates in the Profile Data Bases where one or both parties have less than 1 (but greater than 0) satisfaction values. At this stage of calculation (''Accumulation Stage''), only those buy and sell coordinates with the same associated price and size would be matched to generate orders in accordance with the following rules of priority, subject to the applicable eligibility restrictions:

(A) *Mutual satisfaction.* A potential match with a higher mutual satisfaction value (the product of the two satisfaction values) would take precedence over other potential matches with lower mutual satisfaction values.

(B) *Time of entry (based on the earlier Profile).* Among the potential matches with the same mutual satisfaction, the match with the earlier time of entry, as determined initially by the effective time of entry assigned to the earlier of the buy and sell Profiles involved (the ''earlier Profile''), would have priority over other potential matches.

(C) *Size.* Among the potential matches with the same mutual satisfaction and time of entry for the earlier Profile, priority would be given to one with a larger size.

(D) *Time of entry (based on the later Profile).* Among the potential matches with the same mutual satisfaction, time of entry (for the earlier Profile), and size, the match with the earlier time of entry, as determined this time by the effective time of entry assigned to the later of the buy and sell Profiles involved (the ''later Profile''), would have priority over other potential matches.

(E) *Price assignment.* In regard to all remaining ties between potential matches, which would consist solely of the coordinates for a single pair of buy and sell Profiles from two Users that may be matched with the same mutual satisfaction, time of entry and size, but at different prices, priority would be given to the match at a price more favorable to the User whose Profile has the earlier time of entry. By way of example, among the last potential matches remaining at the price of 10 and also at 10⅛, if the sell Profile is the earlier Profile, then the match would take place at the price of 10⅛. The Commission notes that two or more Profiles that are entered into the OptiMark System representing the same number of shares may result in executions at differing prices depending on the other information and conditions entered into the System.

The Exchange has represented that, for purposes of the PCX Application, the specific times at which Profiles would be centrally processed would vary, depending on the security involved. No Cycle, however, would be scheduled until after the opening of the PCX market for any such security. Similarly, no Cycle would be scheduled at or after the closing of the PCS market for that security. The maximum frequency with which Cycles may take place throughout the trading day would be every 90 seconds, while the minimum would be once a day.

The Exchange has represented that the exact frequency of Cycles as to any given PCX Security would be determined by OSI, taking into account the general characteristics of the security (*e.g.,* trading volume, price, and number of shareholders), the associated Profile flow over a period, and the current level of interest expressed by

[16] *See* Amendment No. 3, *supra,* note 7.

Users. From time to time, OSI may alter the frequency of Cycles in response to subsequent developments. PCX has represented that OSI will consult with PCX prior to altering the frequency of any Cycle.[17] Any change in the frequency of Cycles would be effective upon three days' advance notice to Users. Such notice would be provided electronically, using the same telecommunications linkage and protocols available to Users for submitting Profiles. At all relevant times, Users would be fully informed as to when the next Cycle in a particular PCX Security would take place.

The Exchange would assure that the frequency of Cycles remains commensurate with the financial community's need and demand for the trading service. In addition, the Exchange would assure that the PCX Interfaces and the OptiMark System have sufficient capacity in place to handle any material increase in the volume of data prior to implementing a change in the frequency of Cycles.

Order Execution and Reporting

The Exchange would make available the necessary PCX Interfaces to permit orders in PCX Securities from the OptiMark System to be executed, either on the Exchange or on other market centers participating in ITS through the appropriate Exchange communications linkage. The Exchange would permit one or more pairs of orders resulting from intersection of the Profiles submitted by Users (including PCX specialists and floor brokers) to be routed and executed on the Exchange. Every trade resulting from the execution of a pair of orders on the Exchange would be appropriately reported, by way of the traditional Exchange linkage to the CTS processor for dissemination, in the sequence in which orders are generated from the Cycle. The Exchange would report these trades, similar to the way it currently reports other trades in PCX Securities to the CTS. Accordingly, consistent with the existing reporting practices, a series of orders generated from a single Cycle for the same seller with different buyers at an identical price would be printed on the Tape as one transaction. In general, the report for any transaction resulting from the PCX Application would not be distinguished on the Tape from the trade report of any other order executed on the PCX floor.

As for one or more orders representing matched coordinates from CQS Profiles, and other contra Profiles, the Exchange would submit an ITS commitment reflecting each such order and seeking execution on market centers other than PCX. Every ITS commitment would be sent under the give-up of the relevant member User or the Designated Broker, by way of the traditional Exchange linkage to the ITS, in the sequence in which orders are generated from the Cycle. Each ITS commitment would be assigned a ''T–1'' (one minute) time period as specified in the ITS Plan. The Exchange envisions sending ITS commitments resulting from the PCX Application in the same way other ITS commitments are currently sent from the Exchange. According to the Exchange, ITS commitments resulting from the PCX Application would not be distinguishable from other ITS commitments.

The Exchange would continue to apply all existing rules governing trading on its equity trading floor. For example, market orders routed from members to the Exchange would continue to be executed in the same manner. Similarly, ITS commitments received from ITS participants other than PCX would be executed against the Exchange's prevailing quotations as specified under the ITS Plan. As for limit orders, PCX specialists and floor brokers would be afforded an additional (but not alternative) opportunity to fill such interest through the PCX Application. To the extent that the Exchange specialists and floor brokers submit Profiles to the OptiMark System based on customer interest in their books, the handling of any such Profiles and any resulting trade executions through the PCX Application would be fully consistent with the parameters under which public limit orders are currently filled.

Moreover, PCX specialists would remain fully responsible for managing their limit order books. Accordingly, if a specialist elected not to reflect a customer limit order in the OptiMark System, it would remain accountable for execution at any more favorable price that could have been obtained if such order were processed through the PCX Application. In such a case, consistent with the Exchange's existing floor procedures and practices, the specialist would be required to satisfy or cause to be satisfied the customer limit order so held, either at the limit price specified, or at any better price generated by the Application. PCX has represented that this guarantee is limited to customer limit orders booked prior to the commencement of a Cycle. Therefore, orders booked after the commencement of a Cycle would not be guaranteed an execution at prices obtained as a result of such Cycle.

In Amendment No. 3 to its filing, PCX clarified that, even if the specialist does not submit a Profile for a limit order in its book, the limit order will receive ''the limit price or a better price if one occurred in that cycle, up to the amount of the order or orders executed in OptiMark.'' [18]

Specifically, after a Cycle of the Application is completed, the Application sends the orders to the PCX floor in a batch. The batch of orders, which will be automatically executed, ''will be in a specific, deterministic order, as defined by the Aggregation and Accumulation Stage'' [19] (discussed above). According to PCX, the order of execution will be provided to the specialist, in the same manner as executions performed in another market, such as NYSE. The specialist will have, out of that batch of executions resulting from a Cycle, the prices and size of each execution. If at the beginning of a Cycle a specialist has a limit order in the book that was not reflected as a Profile in the Application, and, as a result of orders generated through the Application, the booked order becomes eligible for execution, the price that will be given to the booked order will be based upon the best price that occurs out of the batch of orders generated by the Application, up to the size of the booked order not entered into the Application as a Profile.

The Exchange presented the following example: There is a booked order to buy 1,000 shares with a 10 limit price, and the specialist does not express the order as a Profile in the Application. The immediately succeeding Cycle of the Application generates orders resulting in transactions at the following prices: 1,000 at 10⅛, 500 at 10, and 1,000 at 9⅞. Without the existence of the Application, an execution in the same security on the PCX at 10 would trigger an execution of the booked order at 10. With the implementation of the Application, the batched transactions resulting from a Cycle would be viewed as a unit for purposes of determining the price at which the booked order should be filled. The specialist, therefore, would look for the best price resulting from the Cycle in determining the price at which to fill the booked order. In this case, the transaction resulting at a price of 9⅞ for 1,000 shares would be the determining price, and the specialist would be obligated to fill the order at

[17] Telephone conversation between John C. Katovich, Senior Vice President, General Counsel, and Director of Legal Affairs, PCX, and Michael Walinskas, Senior Special Counsel, Division of Market Regulation, SEC, Sept. 4, 1997.

[18] *See* Amendment No. 3, *supra,* note 7.

[19] *Id.*

9⅞. If, on the other hand, the Cycle resulted in a series of transactions that included only 500 shares at the prices stated above, and the specialist nevertheless had a booked limit order for 1,000 at 10 (which was not entered into the Application), the specialist would be obligated to fill the first 500 shares of the booked order at 9⅞ and the remaining 500 shares at 10, the next best price generated by the Cycle.

In Amendment No. 3, PCX provided an example of how limit orders booked with PCX specialists would interact with the Application. In the example, a specialist would have two booked limit orders at buy, the first for 1,000 shares, and the second for 500 shares, both at a price of 30. The example assumes that the specialist did not enter the 1,000 share order into the Application, but the specialist did enter the 500 share order into the Application as a Profile. In the example, the next Cycle of the Application resulted in a transaction of 29½ for the 500 share order entered into the Application as a Profile. In such a case, the specialist would be required to fill both orders at 29½.

In Amendment No. 3, PCX also further clarified the manner in which PMP would operate in connection with the Application. Generally, according to the PCX,

> [i]f an order is received and specifically marked PMP (primary market protection), this means that the firm sending the order has usually requested that the order only get filled if within the range of the designated ''primary'' market (usually the NYSE and AMEX). In such a case, the specialist is operating under the understanding that the order will not get filled outside the ''primary'' market range.[20]

In order to ensure that PMP orders can be integrated into the Application, PCX represented that:

> during regular ''primary'' market trading hours, an order specifically marked PMP will have to be treated just like any other booked order when executions result from OptiMark matches, even if the ''primary'' market range has not traded at that price. Similarly, a PMP order reflected into OptiMark as a profile, which is matched in OptiMark and results in an execution, will require that the PMP limit order be filled, even if the price is out of range from the * * * otherwise existing ''primary'' market, however defined.[21]

[20] *See* Amendment No. 3, *supra,* note 7, at 2.

[21] *Id.* PCX will codify this clarification through a rule amendment with the Commission. In this regard, PCX stated that the amendment ''will be consistent with the overall premise that under no circumstance can a specialist accept an execution arising out of orders generated from an OptiMark cycle, without first taking care of any eligible booked orders that were put in the book before the cycle began.'' *Id.*

PCX will undertake to amend its rules so that the operation of the Application would be considered as an exception to Rule 5.32 regarding the execution of orders marked PMP.

The Exchange has also represented the operation of the PCX Application would be consistent with the Exchange's intermarket price protection obligations under the ITS Plan. The OptiMark System incorporates existing market interest emanating from each of the ITS participant markets to which it is not directly linked in the form of CQS Profiles. Because of the rules of priority for considering potential matches between buy coordinates and sell coordinates from any Profiles (including CQS Profiles), all orders that are priced inferior to the quotations of another market center would be generated and executed on PCX only upon submission of appropriate ITS commitments seeking to reach such better-priced interest. As a result, the Exchange has represented that execution of any such orders on PCX would not violate the trade-through rule under the ITS Plan.

The Exchange has represented that all Users would be informed of executions that take place against the Profiles that they submitted for their own or customer accounts promptly after the trades occur. If an ITS commitment resulting from the PCX Application is canceled or only partially filled, the OptiMark System would notify the relevant User and restore to the Profile the volume of the security represented by the unfilled order. All such reports would be sent electronically, using the same telecommunications linkage and protocols that were used to submit the Profiles initially. Unless specified otherwise by non-member Users in advance, executions would not be reported to relevant Designated Brokers until after the close of the trading day in order to limit market impact and other such adverse effects of non-member Users' trading.

Clearance and Settlement

The Exchange has represented that transactions in PCX Securities resulting from the PCX Application, including any ITS commitment sent to another market center and accepted, would clear and settle in the same way as other transactions occurring on the Exchange floor. All orders generated by the OptiMark System that are executed on PCX or another market center through ITS would be reported and entered into the comparison system on a locked-in basis. Orders generated by the OptiMark System on behalf of a member User and the resulting transactions would be cleared and settled using that member User's mnemonic (or its clearing broker's mnemonic). Orders generated by the OptiMark System on behalf of a non-member User and the resulting transactions would be cleared and settled using the appropriate Designated Broker's mnemonic (or its clearing broker's mnemonic).

The Exchange or any operator, administrator or licensor of the OptiMark System would not be responsible for any User's failure to pay for PCX Securities purchased or to deliver PCX Securities sold. Neither OTI nor OSI would be deemed to be a party to or a participant in, as principal or as agent, any trade or transaction entered into or otherwise conducted by Users while using the OptiMark System for the purposes of clearance and settlement.

Hours of Operation

The PCX Application would be initially available for execution of orders and routing of ITS commitments during the regular PCX hours after the opening and prior to the closing.[22] In the event of a suspension in trading of a security listed or traded on the Exchange, the Exchange would suspend the related trading activities respecting that security through the PCX Application. In addition, the Chairman or, in the Chairman's absence, Chief Operating Officer, or other PCX Officer(s) as the Chairman may designate, may determine that market conditions warrant a market-wide halt pursuant to the Exchange's Policy Statement on Market Closings. Trading on the PCX Application of the OptiMark System would be covered by such a market-wide halt. The Exchange may suspend the trading activities through the PCX Application relating to one or more PCX Securities at any time upon consultation with OTI if deemed necessary and proper to preserve system capacity and integrity.

Audit Trail and Surveillance

The Exchange would maintain, or cause to be maintained, a detailed audit trail of each transaction resulting from the PCX Application, including time sequenced records of Profiles submitted to the OptiMark System, orders resulting from a Cycle, and their execution and reporting through PCX facilities. Such data would be stored and preserved for a period of not less than three years, the first two years in an easily accessible place, to assure that the Exchange has sufficient information for exercising its regulatory oversight.

[22] The Exchange's hours are currently 6:30 a.m. (P.T.) to 1:30 p.m. (P.T.).

The Exchange would apply appropriate equity trading surveillance procedures to monitor transactions resulting from the PCX Application.

System Capacity and Integrity

The Exchange believes that the PCX Interfaces and the OptiMark System would provide sufficient capacity to handle the volume of data reasonably anticipated for the PCX Application. The Exchange would have in place security procedures designed to prevent unauthorized access to the PCX Application and to safeguard the PCX Interfaces. The Exchange would obtain similar assurances from OTI and OSI that reasonable security procedures are in place to safeguard the OptiMark System and to protect against threats to the proper functioning of the OptiMark System, including any networks used by the OptiMark System. The Exchange would also obtain appropriate assurances that proper system reliability and system capacity exists to ensure the integrity of the data handled and timely response of the OptiMark computers in connection with the PCX Application.

Fees for the PCX Application

Transactions resulting from the PCX Application would be subject to the Exchange's customary assessment of transaction charges and the Commission's exchange transaction fee under Section 31 of the Act. As a sponsor of the OptiMark System within the meaning of Rule 17a–23 under the Act, OSI, which currently plans to apply to register as a broker-dealer, would be compensated by way of usual and customary commissions, on a cents-per-share-filled basis, for transactions effected by a member User for its own customer accounts through the PCX Application. With respect to transactions effected by a non-member User, OSI would be paid commissions on a similar basis from the relevant Designated Broker.

III. Comments Received

The Commission received fourteen comment letters in response to its request for comments on the PCX proposal.[23] All of the comment letters, except for a letter submitted by the NYSE, supported the PCX's proposal. Letters in support of the proposal were submitted by institutions, broker-dealers (including underwriters, specialists, and retail and clearing brokers), the Treasurer of the State of California, and from academia.

Those submitting letters in favor of the implementation of the OptiMark System provided various reasons for their support of the PCX proposal. For example, commenters stated that the OptiMark System would provide an alternative to the traditional method of order execution and would be the first system available to allow institutions to use complex trading strategies in a secure environment.

Several commenters stated that the OptiMark System would provide both retail and institutional participants with an improved ability to buy or sell securities in a manner that matches their objectives. Commenters stated that both retail and institutional customers would benefit from better prices.

One broker-dealer, for example, stated that the OptiMark System would enable its retail customers to obtain price improvement derived from a mixture of retail and institutional order flow between PCX floor brokers and specialists. Another stated that the system would be beneficial in allowing for anonymous interaction between retail orders and institutional orders.

In addition, some commenters focused specifically on the confidentiality of the OptiMark System. One commenter noted that, currently, trading interest may be difficult to assess because of concerns about information integrity and the market impact cost of large orders. Another stated that one of the biggest problems that institutions face today is attempting to keep their decisions to buy or sell securities confidential. These and other commenters argued that OptiMark would provide a solution to such problems. One commenter stated that the system would allow a portfolio manager to add qualitative information to each order on a non-disclosed basis.

Several commenters stated that the OptiMark System would promote liquidity, and two commenters stated that the Application would reduce market volatility. Several commenters stated that OptiMark would promote market efficiency and reduce transaction costs by lowering the market impact of trades.

Commenters also argued that the OptiMark System would further the development of the national market system (''NMS'') envisioned in the Securities Acts Amendments of 1975,[24] and as reflected in Section 11A of the Act.[25] One such commenter stated that ''OptiMark represents precisely the kind of 'new data processing and communications techniques' that Congress thought when it passed the 1975 Securities Act Amendments would create the opportunity for more efficient and effective market operations, and would foster efficiency, enhance competition, facilitate the offsetting of customer orders, and contribute to best execution.''[26] The same commenter stated that OptiMark's operation as a facility of an exchange, ''with the accompanying linkage to other markets through the ITS system, should ensure that OptiMark has a positive impact on the national market system as a whole.''[27]

One commenter also stated that OptiMark would promote free market competition and would ''erod[e] the private club benefits previously afforded members of dominant exchanges and compel * * * limit order disclosure to the public markets.''[28]

In contrast to the views of the supporting commenters, NYSE submitted a comment letter opposing the PCX rule filing (''NYSE Comment Letter'').[29] The NYSE asked the Commission not to approve the filing, but to require PCX to further explain and clarify its proposal. In its letter, NYSE expressed several concerns about the possible implementation of the OptiMark System. First, NYSE contended that the system would have the effect of ''creating a hidden market'' within PCX, which it believed would be detrimental to other trading interest on PCX and to the NMS, and contrary to established PCX auction rules.[30] NYSE argued that marketable trading interest processed through the Application would not be exposed to the PCX auction or to the NMS until after a transaction has occurred. In NYSE's view, OptiMark Profiles would constitute orders that should be incorporated into PCX's floor-based trading system. More specifically, NYSE contended that Profiles equal to or better than the price of the then-disseminated PCX quotation should be quoted in the same manner as other orders received by PCX. In addition, NYSE argued that a trade resulting from use of the OptiMark System that is printed on PCX would impose new and additional price protection responsibilities on PCX specialists. NYSE claimed that the PCX filing was silent about the right or obligation of PCX floor brokers to ''break up,'' and provide potential price improvement

[23] *See supra,* note 4.

[24] Pub. L. No. 94–29, 89 Stat. 131 (1975).

[25] 15 U.S.C. 78k–1.

[26] *See* Letter from Tim McCarthy, Charles Schwab, *supra,* note 4.

[27] *See id.*

[28] *See* Letter from Harold S. Bradley, American Century Investment Management, Inc., *supra,* note 4.

[29] *See* Letter from James E. Buck, NYSE, *supra.* note 4.

[30] *Id.* at 2.

for, Profiles crossed or matched within the OptiMark System and routed to the PCX floor for execution.

NYSE raised concerns about the potential effect of the Application on PCX's relationship with the ITS with respect to access and liability for clearance and settlement. NYSE stated its belief that the Application's access to ITS would be different from that currently used by PCX for the sending of ITS commitments pursuant to the ITS Plan. NYSE argued that it would be premature for the Commission to approve PCX's filing until PCX has provided the ITS participant markets with a clear and detailed understanding of how PCX intends for OptiMark to access the ITS. NYSE also claimed that PCX was attempting to amend the terms of the ITS Plan to limit PCX's liability beyond the authority set forth in the ITS Plan.[31]

Finally, NYSE stated that the PCX filing did not clearly reflect that all ITS price protection rules would be followed by the users of the Application. NYSE noted that ITS price protection rules specify the obligations of participant members for satisfying trade-throughs, Block Policy trades, and locked markets involving other ITS participant markets, and that these obligations include a requirement to issue ITS commitments to trade. Next, it highlighted that PCX's filing stated that users would be able to ''place restrictions on any potential purchase or sale of shares through ITS.'' [32] NYSE believes this language suggests that a PCX member (or member's customer) could place restrictions on the use of ITS that would ignore the ITS price protection rules. Accordingly, NYSE suggested PCX's filing be amended to note the limitation on a user's right to place limitations on the use of ITS for price satisfaction purposes.

Further, NYSE questioned OptiMark's proposed compliance with the Commission's short sale rule. NYSE noted a letter sent by the PCX to the Commission's Division of Market Regulation in May 1997, requesting relief from the short sale rule.[33] NYSE stated that an exemption ''would not be appropriate for a system such as OptiMark which provides price discovery.'' [34] NYSE also referred to PCX's proposed amendment to PCX Rule 5.14, which proposed that ''[t]he Exchange's short sale rule (Rule 5.18) shall not be applicable to any resulting transaction in the Exchange.'' [35] NYSE argued that the approval of such a proposed rule would ''establish a clear conflict that could lead to inadvertent regulatory violations.'' [36] NYSE recommended that PCX amend its proposal to delete both PCX Rule 5.14 and the above-quoted proposed language.

On August 1, 1997, PCX submitted to the Commission a letter responding to issues raised in the NYSE Comments Letter.[37] In response to NYSE's comment that the Application would create a ''hidden market,'' PCX stated that the Application would operate in a manner consistent with existing principles of the current auction market now in place at PCX as well as at NYSE. PCX represented that ''[b]ids or offers announced on the PCX floor or in the specialist's book will continue to be collected and disseminated by the PCX in full compliance with Rule 11AC1–1'' under the Act, and that PCX's continuous auction facilities, separate and apart from the periodic auction conducted by the Application, would continue to be available to members.[38]

PCX argued that ''[t]he fact that Profiles will not be disseminated as quotes does not create a hidden market'' because the Profiles are analogous to indications of interest, and not bids and offers.[39] PCX further argued that the Application represents a periodic call market facility and that quotes in such market have no meaning because trading interest remains a generalized expression of interest until it is processed during the call. PCX argued that no Profile is eligible for execution until the time of the call, in contrast to a quote, which is a firm bid or offer available for execution at any time. In this regard, PCX believes that the display of any Profile in an open quote stream would contradict the desire of Users submitting Profiles and would impair the integrity of the quote system because individual Users would represent multiple and differing price values for any given buy or sell interest. Thus, PCX stated that it should not be required to display in the PCX quotation User Profiles, including those coordinates with a satisfaction value of 1.

In response to the NYSE argument that the Application would impose new price protection responsibilities on PCX specialists, PCX stated that although the Exchange would require its specialists, under PCX Rule 5.32(a), to honor their obligations for executions at the same or better prices that occur as a result of the Application, this requirement would not constitute a new obligation. As an example, PCX outlined how PCX specialists guarantee the price of executions that occur on the ''other city floor'' [40] of the PCX, noting that under certain circumstances, a PCX specialist may be obligated to fill an order at a price obtained from the ''other'' PCX floor. PCX noted that the guarantee requirements imposed on PCX specialists regarding transactions effected through the Application will likely influence them to reflect frequently their book orders in the OptiMark system, although they would not be obligated to do so. Further, if a specialist did not honor its obligations to execute an order, based upon an execution that occurs in the primary market or within the PCX market, the specialist would be found to be in violation of existing PCX rules.

PCX also disagreed with the NYSE's comment that the PCX proposal does not comply with PCX's crossing rules, specifically PCX Rules 5.14 (a) and (b). According to PCX, under these rules members are responsible for assuring that all existing bids or offers, at or better than the cross price, are filled at their limits. PCX argued that although the OptiMark System would help a User find other trading interest through the central processing of Profiles, this is not the same as a cross transaction on the Exchange floor, where both sides of the trade are brought to the specialist's post by a broker. PCX emphasized that when coordinates from Profiles happen to match at the time of the call, it is fortuitous and can not be considered a cross as defined in either PCX or NYSE rules. PCX further stated that when two Profiles with overlapping coordinates give the appearance of a cross, the processing of these Profiles against other

[31] The NYSE cited, in particular, the language in the PCX's filing that states:

In no event will the Exchange or any operator, administrator or licensor of the OptiMark System be responsible for any User's failure to pay for the PCX Securities purchased or to deliver the PCX Securities sold. Neither OTI nor OSI will be deemed to be a party to or a participant in, as principal or agent, any trade or transaction entered into or otherwise conducted by Users while using the OptiMark System for the purposes of clearance and settlement.

Letter from James E. Buck, NYSE, *supra,* note 4, at 5–6.

[32] *ID.* at 6.

[33] *See* Letter from John C. Katovich, Senior Vice President and General Counsel, PCX, to Richard R. Lindsey, Director, Division of Market Regulation, SEC, dated May 19, 1997 (''PCX May 19 Letter'').

[34] *See* Letter from James E. Buck, NYSE, *supra,* note 4, at 4. NYSE also noted it would not generally comment on this because it understood that Commission staff would not grant the requested exemption from Rule 10a–1 under the Act. *Id.*

[35] *Id.*

[36] *Id.*

[37] *See* Amendment No. 1, *Supra, note 5.*

[38] *Id.* at 2.

[39] *Id.*

[40] The PCX has equity trading floors both in San Francisco and Los Angeles.

trading interest in the PCX Application may not result in a match between the two Profiles. Rather, the priorities established by the Application could effectively ''break up'' any such potential match.

With respect to NYSE's comment on ITS access, the Exchange argued that the Application would not change the method of system access in any manner that calls for an ITS Plan amendment. Instead, the Exchange stated that the Application would be an additional exchange facility, through which the Exchange would be able to honor its existing ITS commitments. The Exchange emphasized that the Application would merely provide more convenient electronic access for the benefit of its members and their customers, and as such, the Application would ''complement one 'example' of system access described in Section 6 of the ITS Plan through added flexibility, thereby promoting the increased use of ITS through information and telecommunications technology innovation, all as intended by the ITS Plan and as required by the Commission under Section 11A of the Exchange Act.'' [41]

With respect to NYSE's argument that the PCX filing would ''effectively amend the terms of the ITS Plan to limit PCX's liability beyond the terms specified in the Plan,'' PCX responded that the filing would not have such an effect; similar limitations on liability have not been construed or applied so as to limit an ITS Participant's contractual obligations arising under Section 9 of the ITS Plan. PCX further stated that NYSE itself limits its liability for any damages sustained in connection with the use of its facilities, citing NYSE Constitution, Article II, Section 6.

PCX strongly disagreed with NYSE's comment that PCX's proposed User restrictions on potential purchases or sales of shares through the ITS would have the effect of obviating the ITS price protection rules, stating that the Exchange ''adheres strictly to the ITS price protection rules.'' [42] The Exchange stated that its filing ''repeatedly provides that no orders may be executed on the Exchange at a price inferior to that of other outstanding trading interest with standing, which includes CQS Profiles derived from the quotes of other ITS Participants.'' [43] The Exchange also stated that Users placing restrictions on any potential purchase or sale of shares through ITS would be required to forgo any potential transactions that would cause a trade-through. The Exchange concluded that permitting a User to place limitations on the use of ITS at the User's own risk is consistent with the ITS plan because it does not implicate the ITS price protection rules.

The PCX letter also mentioned the PCX's May 1997 request for exemptive relief from the short sale rule and noted that it understood that such relief would not be granted. Accordingly, the PCX submitted a proposed amendment to PCX Rule 15.3(b), which (as modified by a subsequent amendment) would add the following language to the Rule:

> and provided further that no Orders designated as ''sell short'' may be generated for execution at a price: (i) Below the price of the immediately preceding match (or the last sale price reported on a consolidated transaction reporting system immediately prior to commencement of the Cycle in the case of the initial match of that Cycle) or (ii) at such price unless such price is above the next preceding different price.[44]

On August 20, 1997, NYSE submitted to the Commission a second comment letter responding to issues that the PCX raised in Amendment No. 1.[45] In its letter, NYSE expanded upon points raised in its initial comment letter. For example, NYSE again raised the ''hidden market'' issue. NYSE argued that the PCX was proposing ''to sponsor two markets (its 'regular' market and the OptiMark cycles) with minimal interaction between the two.'' [46] NYSE also challenged OptiMark's claim that the Cycles would constitute a periodic call market because Cycles would be as frequent as every 90 seconds. As a result, NYSE argued, Users could enter a priced order into a ''nearly-continuous auction, without disclosing the order to the regular market, even if the order matches or improves the national best bid and offer.'' [47] NYSE argued that this activity would stand in direct conflict with recent Commission efforts to integrate all trading interest in the national market system, whether through electronic communication networks or otherwise.

In addition, NYSE reiterated that the Application would be inconsistent with PCX's own auction rules, claiming that orders and executions resulting from the Application would not be integrated with other PCX trading interest and, as such, would not be like other PCX executions. NYSE stated that PCX's rules require that all orders be integrated into the PCX auction and interact with other trading interest taking place on the PCX floor. NYSE argued that, contrary to PCX's auction rules, an order entered on the PCX after the commencement of a Cycle of the Application would ''not interact with an OptiMark 'order' that is 'routed and executed on the [PCX], even if the more recent PCX order is at a better price or has priority over the OptiMark 'order.' '' [48]

In addition, NYSE argued that the PCX's proposed amendment regarding its intended compliance with the Commission's short sale rule, as explained in the PCX's Amendment No. 1, is inconsistent with the wording and purposes of the rule. NYSE characterized PCX's proposal as prohibiting short sales in the Application on minus ticks or zero minus ticks based on the last ''match'' in the Application, and that the Application would rely on the last transaction reported to the CTS only for the initial Cycle. NYSE argued that Rule 10a–1, by contrast, regulates short selling based on consolidated last sales, giving an exchange an option of using the last sale on that exchange. NYSE therefore argued that an exchange ''cannot regulate short sales based on sales in only one component of an exchange's trading system.'' [49]

NYSE also addressed the Application's access to, and liability for clearance and settlement through, the ITS. With respect to access, NYSE took issue with the PCX's statement that the Application ''will complement one 'example' of system access'' described in the ITS Plan. NYSE argued that this statement ''raises serious questions of access to NYSE market and to the markets of the other ITS Participants.'' [50] NYSE stated that PCX intends to make a detailed presentation at an ITS Committee meeting in September 1997, and argued that it would be premature for the Commission to act on the PCX's filing before the meeting and further consideration of the issue.

With respect to the PCX's proposal regarding liability for clearance and settlement with respect to the Application, NYSE restated its earlier position that the PCX's proposal is inconsistent with Section 9 of the ITS Plan, which requires each Participant to assume responsibility for settling certain uncompared ITS trades. NYSE argues that the PCX's proposal attempts to amend the ITS Plan to limit the PCX's liability beyond the terms of the Plan.

---

[41] *See* Amendment No. 1, *supra*, note 5, at 4.

[42] *Id.* at 5.

[42] *Id.*

[44] *Id.* at 1–2.

[45] *See* Letter from James E. Buck, Senior Vice President and Secretary, NYSE, to Jonathan G. Katz, Secretary, SEC, dated Aug. 20, 1997 (''NYSE Second Comment Letter).

[46] *Id.* at 1.

[47] *Id.*

[48] *Id.* at 2.

[49] *Id.* at 3.

[50] *Id.* at 4.

On August 29, 1997, PCX submitted to the Commission two letters supplementing the filing and further addressing issues raised by the NYSE.[51] PCX stated that it is incorrect to characterize an order generated by an Optimark cycle as a ''cross'' given that, under PCX Rule 5.14(a), a cross transaction is ''a transaction in which a member effects both the purchase and sale.''[52] PCX submitted that most matches resulting from a Cycle would be based on trading interest reflected in Profiles submitted by two different members, and thus would not be crosses involving the same member. Although PCX conceded that the same member could submit both buy and sell Profiles that could result in a matched order, it pointed out that the member would have no control or influence in determining the outcome of such a match. PCX concluded that the presence of member intermediation and trading discretion is essential to the definition of ''cross'' as it is understood and applied in the context of continuous auction trading.[53]

In response to NYSE's claim that PCX floor brokers representing customer interest could ''miss the market'' if they chose not to use Optimark, PCX noted that such an outcome was no different than the situation where a floor broker either routes a customer order to another market or is not present in the trading crowd when a cross is announced.[54]

In the PCX ITS Letter, the PCX clarified its continued responsibility to settle trades effected through the PCX Application, pursuant to the terms of the ITS Plan. Specifically, PCX stated that it did not intend to modify any PCX members' obligations under the ITS Plan nor to modify the Exchange's obligation under the Plan to ensure settlement of trades effected via the PCX Application.[55]

IV. Discussion

The Commission finds that the proposed rule change is consistent with the requirements of the Act and the rules and regulations thereunder applicable to a national securities exchange, and in particular, the requirements of Section 6(b) (5).[56] The Commission finds that the Exchange's proposal to establish rules to implement the PCX Application of the Optimark System would promote the Commission's mandate under Section 6(b)(5) to remove impediments to and perfect the mechanism of a free and open market and a NMS, while protecting investors and the public interest. In addition, the Exchange's proposal with respect to the PCX Application is consistent with the Section 6(b)(5) requirements that rules of an exchange be designed to prevent fraudulent and manipulative acts, to promote just and equitable principles of trade, and are not designed to permit unfair discrimination among customers, issuers, or broker-dealers.[57]

In addition, the Commission finds that the proposed rule change is consistent with the requirements of Section 11A of the Act.[58] The Commission believes that the proposed Application of the OptiMark System would further the purposes of Section 11A of the Act and the development of a NMS by promoting economically efficient execution of securities transactions, fair competition among markets, the best execution of customer orders, and an opportunity for orders to be executed without the participation of a dealer. The PCX Application provides a new and potentially more efficient way for the Exchange to match and execute trading interest. The Application appears principally designed to meet the demands of sophisticated portfolio managers and other market professionals implementing complex trading strategies. These market participants often require instantaneous access to the market, and desire to minimize the market impact of their transactions through the expression of varied trading interests on a confidential basis. At the same time, the Application is designed to allow retail customers, through member Users, to interact with institutional trading interests.

The PCX Application is likely to promote competition among market centers because it has the potential to attract new market participants and to increase order flow to the Exchange. By attracting order flow, the Application may provide a new and enhanced source of liquidity for investors. Further, as noted in the majority of the thirteen comment letters that supported the proposal, both institutional and retail investors should benefit from the Application insofar as their expressions of trading interest are represented in the OptiMark System and are executed on the Exchange. As a result, the Application could enhance the ability of investors to have their orders executed on the PCX. Moreover, the Application would increase the ability of investors' orders to interact directly with other investors orders on the PCX.

The Commission has historically encouraged exchanges to integrate new data communications and trade execution mechanisms into their markets in furtherance of the development of the NMS.[59] The Commission, for example, approved the fully computerized National Securities Trading System (''NSTS'') of the Cincinnati Stock Exchange, the MAX and SuperMAX Systems of the Chicago Stock Exchange, and the CAES operated by Nasdaq.[60] In fact, the PCX Application of the OptiMark System shares many of the characteristics of the Chicago Stock Exchange's Chicago Match System, which was approved by the Commission in 1994.[61] Like the

[51] *See* PCX Floor, Letter and PCX ITS Letter, *supra,* note 6.

[52] PCX Floor Letter, *supra,* note 6, at 1.

[53] *Id.*

[54] *Id.* at 2.

[55] PCX ITS Letter, *supra,* note 6. *See also,* PCX Rule 5.23.

[56] 15 U.S.C. § 78(f)(b)(5).

[57] In approving the proposal, the Commission has considered the proposal's impact on efficiency, competition, and capital formation. 15 U.S.C. § 78c(f).

[58] 15 U.S.C. § 78k–1.

[59] In 1982, when instating the Cincinnati Stock Exchange's NSTS as a permanent program, the Commission stated:

In mandating the development of a NMS, Congress expressly stated that ''[n]ew data processing and communications techniques create the opportunity for more efficient market operations.'' . . . In carrying out Congress' mandate, the Commission has taken an evolutionary approach by encouraging the securities industry to take the primary initiative in fashioning trading mechanisms which are consistent with the goals of a NMS. The Commission believes that, as a general matter, the industry has responded well to changing economic and technological demands by attempting to integrate state of the art data processing and communications technology to develop many new trading systems which have advanced the objectives of a NMS. In this respect, the Commission believes that ITS, the NASD's [National Association of Securities Dealers'] Computer Assisted Execution System (''CAES'') and the NSTS represent constructive approaches to integrating trading in physically dispersed locations. (citations omitted)

Securities Exchange Act Release No. 19315 (Dec. 9, 1982), 47 FR 56236 (Dec. 15, 1982).

[60] *See, e.g.,* Securities Exchange Act Release No. 19315 (Dec. 9, 1982), 47 FR 56236 (Dec. 15, 1982) (Commission approval to terminate the NSTS as an experimental program and extend its duration for an indefinite period of time); Securities Exchange Act Release No. 12451 (May 14, 1976), 41 FR 20932 (May 21, 1976) (Commission approval of the MAX system to operate on a permanent basis); Securities Exchange Act Release No. 32631 (July 14, 1993), 58 FR 39069 (July 21, 1993) (Commission approval to operate the SuperMAX system on a permanent basis); Securities Exchange Act Release No. 17601 (Mar. 4, 1981); 46 FR 16171 (Mar. 11, 1981) (Commission Notice of the NASD filing of a proposed rule change for the establishment of CAES); Securities Exchange Act Release No. 17744 (Apr. 21, 1981), 46 FR 23856 (Apr. 28, 1981) (Commission order to implement an automated interface between the ITS and CAES); and Securities Exchange Act Release No. 18713 (May 6, 1982), 47 FR 20413 (May 12, 1982) (implementing ITS/CAES interface and operations).

[61] Securities Exchange Act Release No. 35030 (Nov. 30, 1994), 59 FR 63141 (Dec. 7, 1994). The

Continued

proposed Chicago Match System, the PCX Application blends some of the features of a call market with the continuous auction of the PCX floor. The operation of such a hybird system will differ in important respects from the traditional structure of a trading floor. For the reasons discussed below, however, the Commission does not believe that these differences would cause the PCX Application to violate the provisions of the Act.

First, the Commission believes that the Application, operating as a facility of an exchange, would have the ability and capacity to carry out the regulatory purposes of the Act.[62] As part of its obligations under the Act and pursuant to its own rules, the Exchange would conduct all necessary surveillance of the operation of and trading through the Application.[63] The Exchange has also represented that the Application would have a full audit trail capability, adequate computer capacity to handle and process User Profiles and order flow, and adequate computer security to ensure the safety and confidentiality of User transmission.[64]

Second, contrary to the NYSE's assertion, the Exchange is not operating a hidden market in violation of the Firm Quote Rule.[65] Specifically, the Commission does not believe that the PCX Application violates the Firm Quote Rule. The Firm Quote Rule, among other things, requires exchanges to collect bids, offers, quotation sizes and aggregate quotation sizes from responsible brokers or dealers for subject securities, and make them available to quotation vendors.

A bid or offer is defined in the Firm Quote Rule as the ''bid price and the offer price communicated by an exchange member or OTC market maker to any broker or dealer, or to any customer.'' [66] In order to constitute a bid or offer, therefore, the underlying trading interest must have been communicated to at least one other potential counterparty. Bids and offers are intended to attract other parties to deal with the person publishing the bid or offer at the quoted price. For example, the Commission recently deemed the entry of priced orders into an electronic communications network (''ECN'') to be bids and offers where these orders were widely disseminated to other parties.[67] In contrast, the essence of the Application is its anonymity. Only the Application is aware of the potential trading interest until trades occur. The PCX represents that the Application would ''not permit any interactive communication among Users whatsoever for any solicitation of trading interest (not even on an anonymous basis).'' [68] The PCX further represented that the Application ''differs fundamentally from any 'hit or take' or 'interactive' trading system, which allows the display of order price and size levels by a subscriber for others to act on.'' [69] The Commission agrees with the PCX representation that the Application ''is *not* a mechanism by which system subscribers (1) broadcast prices to other system subscribers and (2) trade with one another at those prices,'' like an exchange or ECN.[70] Accordingly, the Commission believes that the Application as proposed would not violate the Firm Quote Rule and would not fall within the status of an ECN.

Moreover, Profiles, unlike bids and offers, are conditional until they are processed in a Cycle. In this way, Profiles are analogous to indications of interest or CAP orders, neither of which are displayed in exchanges or on Nasdaq. The terms ''bid'' and ''offer,'' as defined by the Firm Quote Rule, do not include ''indications of interest.'' [71] A Profile is only a generalized expression of interest with conditions attached and is not eligible for execution until the completion of the Cycle. Profiles entered into the PCX Application can be revised and cancelled at any time prior to commencement of the next scheduled Cycle.

Further, the Commission does not believe that the PCX Application would create a hidden market within PCX. The Commission particularly disagrees with NYSE's suggestion that PCX's proposed non-dissemination of Profiles to PCX's equity floor and other exchange markets is contrary to the goals of the NMS. Rather, the Commission believes that the unique design of the Application warrants a non-traditional approach in determining whether to require the dissemination of trading interest expressed through operation of the Application. The Application reflects the efforts of PCX to establish a trading system that blends elements of a call market with a continuous auction market, with anonymous Profiles being continuously entered and cancelled until the next scheduled periodic call market (performing a Cycle). The failure to disseminate Profiles does not provide any other market participant with an unfair market advantage as a result of seeing the trading interest that is not shown to others. Any User only knows its own Profile; it has no special access

---

PCX Application differs from Chicago Match in that it is a periodic, rather than a unitary, call market.

[62] The PCX Application is properly regulated as a facility of an exchange, as defined in Section 3(a)(2) of the Act. The PCX Application of OptiMark would use the PCX's premises, property, and services for effecting and reporting transactions. For a recent discussion of the classification of an electronic communication and matching system as a facility of an exchange, *see* Securities Exchange Act Release No. 35030, *supra,* note 61 (concerning the Chicago Match System).

OSI, which plans to register as a broker-dealer and comply with Rule 17a–23 under the Act, would be responsible for operating portions of the PCX Application for the Exchange and would receive commissions from Users for transactions. The Exchange has represented that it will submit any changes to this structure to the Commission as a rule filing.

In addition, OTI expects to offer other exchanges trading services based on the OptiMark System technology. If another national securities exchange chooses to use the OptiMark System, it would be required to file a separate rule filing under Section 19(b) of the Act.

[63] Further, the Exchange will ensure that the Application complies with all trading halts and trading suspensions.

[64] As with any other exchange application, the Commission expects to conduct a full EDP review of the Application and its operations. *See, e.g.*, the Commission's Automation Review Policy guidelines. Securities Exchanges Act Release No. 27445 (Nov. 16, 1989), 54 FR 48703 (Nov. 24, 1989), and Securities Exchange Act Release No. 29185 (May 9, 1991), 56 FR 22490 (May 15, 1991).

[65] 17 CFR 240.11Ac1–1.

[66] *See* CFR 240.11Ac1–1(a)(4).

[67] The term ''electronic communications network'' means, for the purposes of 17 CFR 240.11Ac1–1(c)(5), ''any electronic system that widely disseminates to third parties orders entered therein by an exchange market maker or OTC market maker, and permits such orders to be executed against in whole or in part; except that the term electronic communications network shall not include: (i) Any system that crosses multiple orders at one or more specified times at a single price set by the ECN (by algorithm or by any derivative pricing mechanism) and does not allow orders to be crossed or executed against directly by participants outside of such times; or (ii) Any system operated by, or on behalf of, an OTC market maker or exchange market maker that executes customer orders primarily against the account of such market maker as principal, other than riskless principal.'' *See* 17 CFR 240.11Ac1–1(a)(8). Rule 11Ac1–1(c)(5)(i) provides that the ''[e]ntry of any priced order for a covered security by an exchange market maker or OTC market maker in that security into an electronic communications network that widely disseminates such order shall be deemed to be: (A) A bid or offer under this section, to be communicated to the market maker's exchange or association pursuant to paragraph (c) of this section for at least the minimum quotation size that is required by the rules of the market maker's exchange or association if the priced order is for the account of a market maker, or the actual size of the order up to the minimum quotation size required if the priced order is for the account of a customer; and (B) A communication of a bid or offer to a quotation vendor for display on a display device for purposes of paragraph (c)(4) of this section.'' 17 CFR 240.11Ac1–1(c)(5)(i).

[68] *See* PCX May 19 Letter, *supra,* note 33, at 8.

[69] *Id.* at 8–9.

[70] *Id.* at 9.

[71] Rule 11Ac1–1(a)(4) provides that the terms ''bid and offer'' mean ''the bid price and the offer price communicated by an exchange member or OTC market maker to any broker or dealer, or to any customer, at which it is willing to buy or sell one or more round lots of a covered security, as either principal or agent, *but shall not include indications of interest.*'' (emphasis added) 17 CFR 240.11Ac1–1(a)(4).

to other Users' Profiles. Moreover, users have no control or influence in determining the outcome of a match, other than through the construction of their own Profiles.

In addition, the Commission believes that dissemination of Profiles would likely be very difficult, given that Profiles represent contingent trading interest at different prices, share amounts, and satisfaction levels. Any accurate dissemination of Profiles, other than Profiles containing only a satisfaction value of one, would need to be expressed in a three-dimensional format, which could create confusion for investors.

Third, the Commission believes that trading interest on the PCX floor would be adequately integrated into the PCX Application. Specifically, specialists and floor brokers would be able to reflect customer trading interest by entering Profiles into the PCX Application. In addition, if a specialist does not submit a limit order to the Application, the Exchange would require that specialist to guarantee the execution of the limit order at the price of an order derived from a Cycle that is priced at or better than the limit order's price, up to the amount of shares executed as a result of the particular Cycle.[72] Floor brokers, similarly, would remain subject to best execution obligations. The NYSE has pointed out the possibility that, during a small window of a few seconds, if a limit order were sent to the Exchange immediately following the commencement of a Cycle, this order would not have the opportunity to interact with the Profiles entered into the PCX Application.[73] Thus, once the Cycle is completed, resulting orders sent to the PCX for execution at such limit order's price or better would bypass the limit order, even though such limit order had priority under the PCX's current rules. The Commission acknowledges that there is a possibility of this scenario occurring. Because of the virtually instantaneous nature of the Cycles, however, such a scenario is likely to occur very infrequently.[74]

Fourth, the Commission notes the Exchange's representations that the operation of the PCX Application would be consistent with the Exchange's and its members' obligations under the ITS Plan. Specifically, the Exchange represents that the PCX Application would be operated in a manner consistent with the Exchange's intermarket price protection obligations under the ITS Plan. The PCX Application would incorporate existing market interest from each of the ITS participant markets in the form of CQS Profiles. All orders priced inferior to the quotations of another ITS participant market would be executed on the Exchange only upon submission of appropriate ITS commitments seeking to reach such better-priced interest. For orders representing matched coordinates from CQS Profiles and other Profiles, the Exchange would submit an ITS commitment reflecting each such order for execution on other market centers to which the OptiMark System is not directly linked. Every ITS commitment would be sent under the give-up of the member User or the Designated Broker, by way of the traditional Exchange linkage to the ITS, in the sequence in which orders are generated from the Cycle.

PCX has represented that it proposes to send ITS commitments resulting from the PCX Application in the same way as other ITS commitments are currently sent by the Exchange. The Commission notes that PCX has represented that the Application will be implemented in a manner fully consistent with the ITS Plan, and PCX is engaged in discussions with other ITS participants regarding the requirements of the ITS Plan.

The Commission believes that PCX has adequately represented that its proposed disclaimer of liability (proposed PCX Rule 15.8) covering the operation of the PCX Application does not operate to change or modify in any way PCX's obligations for clearance and settlement of trades matched through the Application and submitted for execution on another market center pursuant to the ITS Plan.

Fifth, the Commission also believes that the PCX will meet its obligation with respect to the reporting of transactions resulting from the Application. The Exchange has represented that transactions resulting from orders routed to the PCX floor from the Application would be reported to the CTS in the sequence in which such orders are generated from a Cycle. The Exchange has represented that it would report these trades in a manner similar to the way it currently reports other trades in PCX Securities to the CTS. Transaction reports resulting from a Cycle of the Application, moreover, would not be distinguishable on the CTS from the trade report of any other order executed on the PCX floor. Although such transaction reports may occur in rapid sequence, with numerous reports being generated in a short period of time, the individual transaction reports would still be reported and displayed in order of the execution of the transactions.

Sixth, although non-members would have access to the Application, such access would only be through an Exchange member broker-dealer. Before submitting Profiles to the PCX Application, non-members would be required to designate a member firm that would authorize their access to the PCX Application and accept responsibility for these non-member transactions. The Exchange states that it expects the Designated Brokers, or the clearing brokers of the Designated Brokers, to impose credit limits on non-member Users of the PCX Application.[75] Other exchanges have allowed non-members to access their facilities through member broker-dealers under similar conditions. For example, the Chicago Stock Exchange's Chicago Match System provided for direct non-member access through personal computers and modems, using a member broker-dealer give-up. The non-member access permitted by the Commission with respect to the Chicago Match System is substantially similar to the non-member User access proposed by PCX.[76]

[72] For example, if a specialist received a customer limit order to buy 1,000 shares at 20 prior to the commencement of a Cycle, and the best priced order generated by the Cycle was assigned a price of 19½, involving 900 shares, with the next best priced order at 19¾, involving 1,000 shares, the specialist would be obligated to fill 900 shares of the customer limit order at 19½, and fill the balance at 19¾.

[73] NYSE Second Comment Letter, *supra,* note 45, at 2.

[74] Contrary to NYSE's understanding, PCX specialists would not be required to guarantee customer limit orders booked after the commencement of a Cycle at prices obtained as a result of such Cycle.

[75] Further, Exchange members would be required to maintain information and records concerning non-members access for which they are responsible. The Exchange has represented to the Commission that it would require its members to make such non-member User information available to the Exchange upon request, so that the PCX can fulfill its duties regarding surveillance.

[76] *See* Securities Exchange Act Release No. 35030, concerning the Chicago Match System, *supra,* note 61. As with the PCX Application, the CHX required non-member users of the Chicago Match System to enter into several agreements to ensure that a CHX member had responsibility and control over the non-member's activities. These responsibilities, included, among other things, controlling and clearing the orders entered by non-members, assuming legal responsibility of the non-member orders entered, and ensuring appropriate credit limits. *See id.* The Commission's approval order for the Chicago Match System also noted that the then anticipated non-member use of the Chicago Match System was analogous to non-member access to the NYSE's Designated Order Turnaround System (now referred to as ''SuperDOT''). The SuperDOT System is an electronic order-routing system that enables NYSE members and their customers to transmit market and limit orders in all NYSE-listed securities directly to the specialist post where the securities are traded, or to the member firm's booth. Non-member customers, however, must obtain the electronic means to access SuperDOT through a

Continued

Seventh, PCX is adopting reasonable requirements for the clearance and settlement of transactions resulting from the Application. In particular, the Commission believes it is appropriate for PCX to require that: (i) All orders generated by the Application that are executed on PCX or another market center through ITS be reported and entered into the comparison system on a locked-in basis; (ii) orders generated by the Application on behalf of a member User and the resulting transactions be cleared and settled using that member User's mnemonic (or its clearing broker's mnemonic, as applicable); and (iii) orders generated by the Application on behalf of a non-member User and the resulting transaction be cleared and settled using the appropriate Designated Broker's mnemonic.

Finally, the Commission believes that PCX has established that short sales effected through the Application, pursuant to the requested exemption and in accordance with the restrictions contained in proposed Rule 15.3(b), would not be susceptible to the practices that Rule 10a–1 is designed to prevent. PCX has amended its proposal to provide for substantial compliance with Rule 10a–1.[77] PCX represents that the first match of a Cycle, if it involves a short sale, would be in compliance with Rule 10a–1. Subsequent matches would use the price of the immediately preceding match in the Cycle, rather than the last trade in the consolidated transaction reporting system as a reference. The Division of Market Regulation, by delegated authority, intends to grant PCX an exemption from Rule 10a–1 to permit matches within a Cycle (those subsequent to the initial match) to use the immediately prior match as a reference for determining compliance with Rule 10a–1. The Commission, therefore, believes that PCX has adequately addressed concerns arising under the short sale rule.

The Commission finds that good cause exists to grant approval to Amendment Nos. 1, 2, and 3 to the proposed rule change on an accelerated basis. Collectively, these amendments reflect PCX's proposed handling of short sales affected through the Application and clarify PCX specialist obligations relating to price protection for orders generated by the Application. The short sale amendment narrows the scope of the proposed short sale exemption attendant to OptiMark transactions. Moreover, as stated above, the Commission has determined that PCX's proposed short sale restrictions substantially mirror the requirements of Rule 10a–1 and are designed in a manner that will not permit the types of short sale practices Rule 10a–1 was designed to prohibit. Accordingly, the Division intends to issue PCX an exemption from Rule 10a–1. In addition, the Commission believes that the amendments pertaining to specialist price protection obligations resulting from orders generated by the Application merely clarify and provide explanatory examples of how the PCX rules relating to the Application will ensure price protection of limit orders. The Commission therefore finds good cause to accelerate approval of Amendment Nos. 1, 2, and 3.

V. Solicitation of Comments

Interested persons are invited to submit written data, views and arguments concerning Amendment Nos. 1, 2, and 3. Persons making written submissions should file six copies thereof with the Secretary, Securities and Exchange Commission, 450 Fifth Street, N.W., Washington, D.C. 20549. Copies of the submission, all subsequent amendments, all written statements with respect to the proposed rule change that are filed with the Commission, and all written communications relating to the proposed rule change between the Commission and any person, other than those that may be withheld from the public in accordance with the provisions of 5 U.S.C. § 552, will be available for inspection and copying in the Commission's Public Reference Section, 450 Fifth Street, N.W., Washington, D.C. 20549. Copies of such filing will also be available for inspection and copying at the principal office of the above-mentioned self-regulatory organization. All submissions should refer to the file number in the caption above and should be submitted by October 15, 1997.

VI. Conclusion

For the reasons discussed above, the Commission finds that the proposal is consistent with the Act.[78]

It therefore is ordered, pursuant to Section 19(b)(2) of the Act,[79] that the proposed rule change (SR–PCX–97–18) is hereby approved, as amended.

For the Commission, by the Division of Market Regulation, pursuant to delegated authority.[80]

Margaret H. McFarland,

Deputy Secretary.

[FR Doc. 97–25319 Filed 9–23–97; 8:45 am]

BILLING CODE 8010–01–M

broker-dealer member. Like the Chicago Match System, the NYSE's SuperDOT system requires NYSE members to monitor customers' electronic orders and to provide the NYSE with an acknowledgement indicating their responsibility for orders. *See id.*

[77] The NYSE asserted that new Rule 15.4 proposed by PCX improperly stated that ''the Exchange's short sale rule (Rule 5.18) shall not be applicable to any resulting transaction in the Exchange.'' *See* Letter from James E. Buck, NYSE, *supra,* note 4, at 4. The Commission notes that the PCX has removed this statement from proposed new Rule 15.4.

[78] 15 U.S.C. §§ 78f and 78s(b)(2).

[79] 15 U.S.C. § 73s(b)(2).

[80] CFR 200.30–3(a)(12).

SMALL BUSINESS ADMINISTRATION

Mid-Atlantic States Regional Fairness Board; Public Hearing

The Mid-Atlantic States Regional Fairness Board will hold a public meeting on Thursday, September 25, 1997, at the CitiCorp Center, 135 E. 35th Street, 14th Floor, Room J, New York, NY, to inform the small business community of the existence of a regulatory enforcement oversight process and of SBA's desire to collect information regarding businesses' experience with regulatory enforcement actions, and to discuss such matters as may be presented by members, staff of the U.S. Small Business Administration, or others present.

For further information, please contact Gary P. Peele at (312) 353–0880.

Dated: September 12, 1997.

Debra Silimeo,

Deputy Associate Administrator, Office of Communications and Public Liaison.

[FR Doc. 97–25274 Filed 9–23–97; 8:45 am]

BILLING CODE 8025–01–P–M

DEPARTMENT OF TRANSPORTATION

Surface Transportation Board

[STB Ex Parte No. 290 (Sub No. 5) (97–4)]

Quarterly Rail Cost Adjustment Factor

AGENCY: Surface Transportation Board, DOT.

ACTION: Approval of rail cost adjustment factor.

SUMMARY: The Board has approved a fourth quarter 1997 rail cost adjustment factor (RCAF) and cost index filed by the Association of American Railroads. The fourth quarter 1997 RCAF (Unadjusted) is 1.104. The fourth quarter 1997 RCAF (Adjusted) is 0.738. The fourth quarter 1997 RCAF–5 is 0.718.

EFFECTIVE DATE: October 1, 1997.

FOR FURTHER INFORMATION CONTACT: H. Jeff Warren, (202) 565–1549. TDD for the hearing impaired: (202) 565–1695.

SUPPLEMENTARY INFORMATION: Additional information is contained in the Board's decision. To purchase a copy of the full decision, write to, call, or pick up in person from: DC NEWS & DATA, INC., Suite 210, 1925 K Street, NW, Washington, DC 20423, telephone (202) 289–4357. (Assistance for the hearing impaired is available through TDD services (202) 565–1695.)

This action will not significantly affect either the quality of the human environment or energy conservation.

Pursuant to 5 U.S.C. 605(b), we conclude that our action will not have a significant economic impact on a substantial number of small entities within the meaning of the Regulatory Flexibility Act.

Decided: September 18, 1997.

By the Board, Chairman Morgan and Vice Chairman Owen.

Vernon A. Williams,

Secretary.

[FR Doc. 97–25352 Filed 9–23–97; 8:45 am]

BILLING CODE 4915–00–P

DEPARTMENT OF TRANSPORTATION

Surface Transportation Board

[STB Finance Docket No. 33463]

The Burlington Northern and Santa Fe Railway Co.—Trackage Rights Exemption—The Houston Belt & Terminal Railway Co.

The Houston Belt & Terminal Railway Company (HB&T) has agreed to grant local trackage rights to The Burlington Northern and Santa Fe Railway Company (BNSF) over HB&T's tracks in Houston, TX, as follows: (a) The West Belt main line between Belt Junction, at milepost 7.2, and TN&O Junction, at milepost 11.1; and (b) the East Belt main line between (1) milepost 0.0 and milepost 3.4, and (2) milepost 12.5, at Tower 85, and milepost 14.3, at Double Track Junction, a distance of approximately 9.1 miles.

The transaction is scheduled to be consummated on September 17, 1997.

The purpose of the local trackage rights is to permit BNSF to provide service to HB&T's shippers and to improve the operating efficiencies of the applicants.

As a condition to this exemption, any employees affected by the trackage rights will be protected by the conditions imposed in *Norfolk and Western Ry. Co.—Trackage Rights—BN,* 354 I.C.C. 605 (1978), as modified in *Mendocino Coast Ry., Inc.—Lease and Operate,* 360 I.C.C. 653 (1980).

This notice is filed under 49 CFR 1180.2(d)(7). If it contains false or misleading information, the exemption is void *ab initio.* Petitions to revoke the exemption under 49 U.S.C. 10502(d) may be filed at any time. The filing of a petition to revoke will not automatically stay the transaction.

An original and 10 copies of all pleadings, referring to STB Finance Docket No. 33463, must be filed with the Surface Transportation Board, Office of the Secretary, Case Control Unit, 1925 K Street, NW, Washington, DC 20423–0001. In addition, a copy of each pleading must be served on Michael E. Roper, Esq., PO Box 961039, Fort Worth, TX 76161–0039.

Decided: September 15, 1997.

By the Board, David M. Konschnik, Director, Office of Proceedings.

Vernon A. Williams,

Secretary.

[FR Doc. 97–25351 Filed 9–23–97; 8:45 am]

BILLING CODE 4915–00–P

DEPARTMENT OF TRANSPORTATION

Surface Transportation Board

[STB Finance Docket No. 33461]

Southern Pacific Transportation Co.—Trackage Rights Exemption—The Houston Belt & Terminal Railway Co.

The Houston Belt & Terminal Railway Company (HB&T) has agreed to grant overhead and local trackage rights to Southern Pacific Transportation Company (SP) over HB&T's tracks in Houston, Harris County, TX. The overhead trackage rights are described as follows: (1) The West Belt Subdivision between milepost 0.0 and milepost 11.1; (2) the East Belt Subdivision between milepost 0.0 and milepost 14.3; and (3) the Columbia Tap from SP milepost 9.2 to the end of the line. The local trackage rights are described as follows: (1) The West Belt Subdivision between 0.00 and connection at milepost 7.2; (2) the East Belt Subdivision between Belt Junction, at milepost 3.4, and GH&H connection, at milepost 12.5; and (3) the Columbia Tap near Pierce Junction, at SP milepost 9.2, to the end of the line.

The transaction is scheduled to be consummated on or after October 6, 1997.

The purpose of the overhead trackage rights is to permit SP to operate over HB&T's trackage in Houston. The purpose of the local trackage rights is to permit SP to provide service directly to shippers on HB&T's tracks in the City of Houston.

As a condition to this exemption, any employees affected by the trackage rights will be protected by the conditions imposed in *Norfolk and Western Ry. Co.—Trackage Rights—BN,* 354 I.C.C. 605 (1978), as modified in *Mendocino Coast Ry., Inc.—Lease and Operate,* 360 I.C.C. 653 (1980).

This notice is filed under 49 CFR 1180.2(d)(7). If it contains false or misleading information, the exemption is void *ab initio.* Petitions to revoke the exemption under 49 U.S.C. 10502(d) may be filed at any time. The filing of a petition to revoke will not automatically stay the transaction.

An original and 10 copies of all pleadings, referring to STB Finance Docket No. 33461, must be filed with the Surface Transportation Board, Office of the Secretary, Case Control Unit, 1925 K Street, NW., Washington, DC 20423–0001. In addition, a copy of each pleading must be served on Joseph D. Anthofer, Esq., 1416 Dodge Street, #830, Omaha, NE 68179.

Decided: September 15, 1997.

By the Board, David M. Konschnik, Director, Office of Proceedings.

Vernon A. Williams,

Secretary.

[FR Doc. 97–25349 Filed 9–23–97; 8:45 am]

BILLING CODE 4915–00–P

DEPARTMENT OF TRANSPORTATION

Surface Transportation Board

[STB Finance Docket No. 33462]

Union Pacific Railroad Co.—Trackage Rights Exemption—The Houston Belt & Terminal Railway Co.

The Houston Belt & Terminal Railway Company (HB&T) has agreed to grant local trackage rights to Union Pacific Railroad Company (UP) over HB&T's tracks in Houston, Harris County, TX, as follows: (1) The West Belt Subdivision between milepost 0.00 and connection at milepost 7.2; (2) the East Belt Subdivision between Belt Junction, at milepost 3.4, and GH&H connection, at milepost 12.5; and (3) the Columbia Tap near Pierce Junction, at SP milepost 9.2, to the end of the line.

The transaction is scheduled to be consummated on or after October 6, 1997.

The purpose of the local trackage rights is to permit UP to provide service directly to shippers on HB&T's tracks and will result in an efficient and economical operation in the City of Houston.

As a condition to this exemption, any employees affected by the trackage rights will be protected by the conditions imposed in *Norfolk and Western Ry. Co.—Trackage Rights—BN*, 354 I.C.C. 605 (1978), as modified in *Mendocino Coast Ry., Inc.—Lease and Operate*, 360 I.C.C. 653 (1980).

This notice is filed under 49 CFR 1180.2(d)(7). If it contains false or misleading information, the exemption is void *ab initio.* Petitions to revoke the exemption under 49 U.S.C. 10502(d) may be filed at any time. The filing of a petition to revoke will not automatically stay the transaction.

An original and 10 copies of all pleadings, referring to STB Finance Docket No. 33462, must be filed with the Surface Transportation Board, Office of the Secretary, Case Control Unit, 1925 K Street, NW., Washington, DC 20423–0001. In addition, a copy of each pleading must be served on Joseph D. Anthofer, Esq., 1416 Dodge Street, #830, Omaha, NE 68179.

Decided: September 15, 1997.

By the Board, David M. Konschnik, Director, Office of Proceedings.

Vernon A. Williams,

Secretary.

[FR Doc. 97–25350 Filed 9–23–97; 8:45 am]

BILLING CODE 4915–00–P

DEPARTMENT OF THE TREASURY

Finding of No Significant Impact for Implementation of White House Security Review Vehicular Traffic Restriction Recommendations

AGENCY: Department of the Treasury.

ACTION: Notice.

SUMMARY: Notice is hereby given that the Department of the Treasury (Treasury) has made a finding of no significant impact (FONSI) with respect to the environmental assessment (EA) for implementation of White House Security Review Vehicular Traffic Restriction Recommendations. This EA was prepared by the Department of the Treasury following the security action to restrict vehicular access to certain streets in the vicinity of the White House Complex pursuant to the emergency provision (40 CFR 1506.11) of the Council on Environmental Quality's (CEQ) National Environmental Policy Act (NEPA) implementing regulations. The Federal Highway Administration (FHWA) was a cooperating agency.

FOR FURTHER INFORMATION CONTACT: For a copy of the FONSI contact Mr. Bill McGovern, Environment and Energy Programs Officer, 1500 Pennsylvania Avenue, NW, Treasury Annex Room 6140, Washington, DC, 20220; telephone (202) 622–0043; fax (202) 622–1468. Copies of the EA are also available at the above address. The EA is still available on the Department of the Treasury's home page at http://www.treas.gov. Additionally, copies of the EA were mailed to Federal, State, and local agencies; public interest groups; interested individuals; and District of Columbia public libraries.

SUPPLEMENTARY INFORMATION: On June 2, 1997, the Treasury made the EA available to the public for a thirty day comment period. A total of 650 copies of the EA were distributed to Federal, state, and local agencies, Members of Congress, the Government of the District of Columbia, private organizations and interested members of the public. Additionally, the EA was available via the Internet. Twelve comment letters were received. Three of the comment letters were from private individuals. Two were from individuals or agencies representing the District of Columbia: Eleanor Holmes Norton, and the District of Columbia Department of Public Works (DCDPW). Three were from historic preservation organizations and sites: the Advisory Council on Historic Preservation (ACHP); the National Trust for Historic Preservation; and Saint John's Church. Four were from other governmental entities: Region III of the Environmental Protection Agency; the National Capital Planning Commission; the National Park Service (NPS); and the Washington Area Metropolitan Transit Authority (Metro).

A brief description of the security action and the findings of the EA are presented below followed by a summary of the issues raised in the comment letters along with Treasury's response for each issue.

On May 19, 1995 the Secretary of the Treasury ordered the Director of the United States Secret Service to restrict vehicular traffic on certain streets surrounding the White House Complex. The Director implemented the action on May 20, 1995. The security action was taken to provide necessary and appropriate protection for the President of the United States, the first family, and those working in or visiting the White House Complex.

This security action was one of several recommendations resulting from the ''White House Security Review'' (the Review). The final report of the Review is classified; however a ''Public Report of the White House Security Review'' was issued in May 1995. The Review's recommendation states that it was ''not able to identify any alternative to prohibiting vehicular traffic on Pennsylvania Avenue that would ensure the protection of the President and others in the White House Complex from explosive devices carried in vehicles near the perimeter.''

The EA examined the impacts of the security action on transportation, air quality, noise, vibration, visual/aesthetic resources, cultural resources, pedestrian access, socioeconomic resources, natural resources and cumulative environmental effects.

Available pre-action data was collected from local and Federal agencies and supplemented by traffic counts and travel time analysis conducted for the EA. With the exception of traffic counts for certain intersections, the available pre-action data was not directly comparable to the post action measurements and did not allow for accurate comparison of before and after action conditions. The analysis in the EA described the conditions after the action and several traffic modifications which the DCDPW implemented to alleviate congestion.

The EA did identify certain streets which received large increases in traffic after the security action. It also identified other streets which had large decreases in traffic. It was impossible to determine exactly how much of the increase or decrease was due to the security action because of the above mentioned lack of pre-action data. The majority of the streets in the study area continue to operate at an acceptable level, and traffic levels are typical of a downtown area in a major city.

The changes in traffic patterns did not result in any violations of National Ambient Air Quality Standards (NAAQS) for carbon monoxide, the pollutant of highest concern in intersection modeling. While the area remains in non-attainment status for ozone, ozone levels should not be significantly changed as a result of the security action. Ozone changes are more apt to result when there is a significant increase in vehicle miles traveled. The security action merely shifted traffic within the local area.

Noise levels in the study area were not significantly increased by the security action. Levels in the area on the north side of the White House dropped noticeably. Vibration levels on H street were examined and found to be similar to pre-existing levels. The frequency of vibration probably did increase; however, because the vibration levels remain below the threshold for damage to fragile historic buildings, no problems are anticipated.

The placement of the temporary security barriers has had an adverse visual impact on a number of historic buildings in the study area. This will be remedied by the NPS when they complete their plan for replacement of the temporary barriers with an acceptably designed permanent barrier. The removal of traffic from Pennsylvania Avenue presents pedestrian tourists and residents alike with an improved view of the north side of the White House.

Pedestrian access as measured by accident data appears to be relatively unchanged. Access to the north side of the White House is improved at Pennsylvania Avenue.

Socioeconomic analysis was limited to emergency services (fire and police) and Metro bus cost increases and parking meter revenue losses. No police or fire stations were moved as a result of the security action. Some minor adjustments in emergency response routes were made. Metrobus changed several routes and bus stops as a result of the security action. Some intersections had to be reconfigured to accommodate the turning radius of the buses. Metrobus provided a cost estimate of $115,000 in capital costs and $314,000 in annual operating costs. Parking meter revenue losses were estimated to be $98,000 annually.

No endangered or threatened species are known to frequent the study area. Little or no impact occurred to the native wildlife since there was no ground disturbing activity.

The cumulative impacts analysis did not identify any violation of NAAQSs even when the projected full operation of the Ronald Reagan Federal Building was added into the air quality analysis.

A number of recommendations are discussed which could further improve traffic conditions in the area around the White House. These recommendations are presented in the EA; however, they are meant for consideration by the relevant NPS and District of Columbia offices which have the legal authority to implement them.

None of the impacts analyzed in the EA were found to be significant under NEPA. None of the comment letters raised new issues that were not addressed in the EA. The comments along with responses to each comment are included below. Based on the FONSI, an Environmental Impact Statement will not be prepared for the security action (40 CFR 1501.4(c), (e)).

Summary of issues raised in the comment letters:

Issue 1: Two commenters questioned the lack of alternatives in the environmental assessment (EA). Both suggested alternatives that should have been considered.

Response: The White House Security Review, which was an eight month comprehensive study, considered numerous other alternatives; however, it ultimately concluded that none of the other alternatives would provide the necessary level of protection to the White House Complex. The Security Review is classified top secret and could not be included in a public review document such as the EA.

Issue 2: Two commenters stated that Treasury should prepare an Environmental Impact Statement (EIS) because the EA does not adequately address the socioeconomic impacts of the action. Both stated that there are significant impacts to the commercial sector of the city from the restriction.

Response: Neither comment provided any data to support the assertion as to commercial impact. Treasury's analysis of the economic impact of the action was limited to identifiable costs incurred by the District in terms of increased Metro costs and lost parking revenue. Treasury was able to gather reliable data in each of these areas. Over 150 copies of the EA were mailed to commercial entities and associations representing the private sector. No comments were received from any of these entities.

Issue 3: Three commenters questioned how Metro and the District would be reimbursed for the Metrobus costs incurred and parking meter revenue lost as a result of the security action.

Response: Treasury continues to work with the Office of Management and Budget to explore ways in which the Federal Government can provide economic support to Metro and the District.

Issue 4: Two commenters stated that Treasury should prepare an EIS because the EA does not adequately address the traffic conditions resulting from the security action. One commenter alleged that Treasury did not consider all the traffic data that might be available.

Response: The EA characterizes the traffic operating conditions within the study area in terms of level of service and travel speed and identifies the streets which received the increases and decreases in traffic. It does not quantify the increase or decrease in commuting time resulting from the security action, because of the lack of a comparable pre-action data. The emergency nature of the action precluded a systematic, advance collection of traffic data. Existing data was used to the extent possible, but no complete set of information ever existed which could be used for a direct comparison of before and after conditions. After an extensive search, every available source of data was used for the traffic analysis in the EA, including the DCDPW, the FHWA, and the NPS.

Issue 5: One commenter stated that the EA had thoroughly evaluated the potential impacts of the action. It concluded that the impacts were minor, should be further reduced by the recommendations in Chapter 3 and recommended that we prepare a finding of no significant impact.

Response: Treasury agrees the impacts are minor. It should be noted that several of the recommendations in Chapter 3 have been implemented by the cognizant agencies such as the DCDPW and Metro. The recommendations are items which could provide additional relief to traffic problems.

Issue 6: Three commenters questioned the adequacy of the air quality analysis provide in the EA. They believe that since the District was in non-attainment status for ozone, even before the security action, and attainment for carbon monoxide (CO), ozone should have been modeled to measure any increases. One commenter stated that slow moving vehicles would emit more emissions than were emitted before the action.

Response: Ozone is a regional problem. An action that creates traffic delay within a corridor of the study area does not translate into increased ozone in that same corridor because of the time lag between the emission of substances that are the precursors to ozone and ozone creation. Such an action theoretically could pose a threat to the region by representing an increase in the inventory of emissions leading to ozone formulation. The effects of individual projects are not known; the state of the art is to take care of ozone in planning, accounting for the interaction of numerous actions and multiple interrelated factors. The security action is not considered to be regionally significant. Many things contribute to ozone production. Hence the analysis at the region wide level. It is not common practice to conduct an assessment of the effects of an individual project, primarily because the individual project normally is not significant enough to perform an entire regional analysis to see how it fits into the picture. Whatever the effects the individual action would have on emissions would be within the terms of error of the model and thus would be statistically insignificant.

Additionally, the security action did not result in a large increase in vehicle miles traveled (VMT); the traffic that

otherwise would have been using Pennsylvania Avenue has shifted to adjoining streets. Idling or slow moving vehicles have low volatile organic compound (VOC) and nitrous oxide (Nox) emission rates. Instead, the amount of VMT and the speed of the travel are the main influences on VOC and Nox production. For Nox, which is the more vexing of the main ozone producing pollutants, any decrease in average speed below 28 miles per hour actually reduces emissions. Most of the traffic in the study area moves at speeds below this level during the three peak periods.

Issue 7: One commenter stated the belief that Treasury was trying to conceal the extent of the increase in carbon monoxide (CO) emissions, positing that the model results should be compared to ambient concentrations prior to the closing of Pennsylvania Avenue to vehicular traffic in 1995.

Response: While a comparison of the CO levels prior to and after the action could potentially find some increases in emissions, such a comparison would be impossible to perform, because traffic levels and CO concentrations were not measured before the action took place. In addition, an increase in emissions, by itself, is not an indication that a problem exists, provided that the NAAQS are met, and the State Implementation Plan is not violated. The EA shows that both these conditions are met. The analysis performed in the EA satisfies the requirements of the NEPA.

Issue 8: One commenter questioned the treatment of indirect emissions in the EA and the assertion that Treasury doesn't have control over these emissions.

Response: The direct and indirect emissions resulting from the security action were analyzed under NEPA. The same analysis techniques were used that would have been used for the analysis under the Clean Air Act Amendments' (CAAA) conformity requirements had they been applicable. The indirect emissions were not included in reaching a CAAA conformity decision because Treasury does not have a continuing program of control over traffic in the downtown area.

Issue 9: Two commenters stated that the results of the noise and vibration analysis along H Street are not representative of what they experience at their locations. One stated that parking tour buses along H Street were a noisy visual ''wall of steel'' on the historic structures. The same commenter requested that a vibration barrier be installed along H Street to eliminate the potential for damage to the historic structures. One questioned the use of the 95 dB vibration threshold for damage to extremely fragile historic buildings from the Federal Transit Administration (FTA).

Response: The noise and vibration data in the EA are actual data taken in a representative manner at various locations in the H Street area. This data is consistent with the limited amount of pre-existing data that was available. Treasury believes that repairing of the street could further reduce the noise and vibration levels along H Street. Treasury agrees that the illegally parked tour buses create additional sources of noise and vibration and should be removed by the appropriate authorities.

According to the FTA, the 95 dB vibration threshold is applicable to both short term impacts from construction and long-term vibration effects of operational traffic. It was used in the EA because it is one of only a few guidance publications on the effects of vibration. Further research has identified the California Department of Transportation (Caltrans) criteria for historic buildings and ancient ruins. The Caltrans guidance applies to continuous vibration sources, such as those resulting from traffic and trains. The Caltrans guidance uses a vibration criteria of 0.08 inch/second Peak Particle Velocity (PPV) as the threshold for damage. PPVs below this level should not result in damage. This is a more conservative level than the FTA's 95 dB (rms) or 0.12 inch/second PPV criteria. The post-action measured levels along H Street were 0.016 inch/second or below. Pre-action data showed levels as high as 0.035 inch/second PPV at Decatur House. Both the pre- and post-action levels are well below the Caltrans level of 0.08 inch/second PPV. It is clear that the security action did not result in any significant increase in these levels, and the vibration data does not show any need for installation of a vibration barrier along H Street.

Issue 10: Two commenters stated that the cumulative impacts analysis in the EA was deficient because it did not include a discussion of the General Service Administration's (GSA) proposal to limit on street parking at Federal Office Buildings here in the District.

Response: The purpose of the EA was to analyze the security action, which occurred two years before the GSA proposal. The GSA proposal is currently at the scoping stage and was not developed enough to include in the EA at the time the EA was being written. A draft of the Treasury EA was reviewed by GSA. GSA did provide detailed information about the parking at the Ronald Reagan Federal Building for use in the cumulative impact analysis. The GSA action will be fully described in a draft EIS they plan to release in December 1997. The security action should be part of the base condition for their EIS.

Issue 11: Three commenters asked questions related to the Metrobus impacts. Two requested detailed data on increases or decreases in ridership resulting from the actions. One provided corrections related to schedules and stops.

Response: Information obtained from Metro after the security action indicated there were some ridership changes in the period before and after the security action, but the changes could not be attributed to the security action. The corrections related to stops and schedules are acknowledged.

Issue 12: The Advisory Council on Historic Preservation stated that additional information about the historic character of the affected buildings would be needed to complete the Section 106 review under the National Historic Preservation Act. The commenter also clarified the extent of the original Section 106 review coverage undertaken at the time of the security action by Treasury.

Response: Additional information on the significance of the buildings on the register will be included in any follow-on Section 106 compliance activity. Treasury agrees that the temporary barriers were addressed as an emergency action at the time of the action and that only newly identified issues would be part of a follow-on Section 106 activity. It was important to recognize the adverse effect of the temporary barriers and to clarify that the National Park Service will be replacing the temporary barriers with a system of permanent barriers as part of its Long-term Design Plan for Pennsylvania Avenue.

Issue 13: One commenter noted that the description of the Section 106 compliance activity was confusing as to which agencies were doing what.

Response: Section 106 compliance for the placement of the temporary security barriers was completed by the Treasury in 1995. The NPS has a project to develop an acceptable permanent design and replace the temporary barriers, which will be subject to the Section 106 compliance process. Treasury is conducting a separate Section 106 process to examine effects other than the placement of the temporary security barriers, including traffic increases and the resulting visual, noise, and vibration impacts.

Issue 14: One commenter noted that the E Street traffic recommendation could affect the Zero Milestone and the Butt-Millet memorial, raising historic preservation issues that were not included in the EA.

Response: The recommendation for providing for resumption of westbound traffic on E Street assumed that the existing street configuration would be maintained and not require widening in the area of the Zero Milestone and the Butt-Millet memorial. The recommendations provided in Chapter 3 are just that, recommendations for consideration by the agencies with the authority to implement them.

Issue 15: One commenter stated that the EA was misleading because it did not describe the process for reaching a decision on whether to issue a FONSI or a notice of intent to prepare an environmental impact statement.

Response: The CEQ's NEPA regulations have been in place since 1978. Treasury did not feel it was necessary to explain the purpose of an environmental assessment in its document. The comment period was announced in the **Federal Register** and the EA itself.

Issue 16: One commenter stated that traffic was worse and that Pennsylvania Avenue and E Street should be reopened to vehicular traffic.

Response: The security need for the restriction has not been eliminated; however, Treasury is working with other agencies to examine potential new designs for traffic on E Street. The EA does show that some streets have had increases in traffic. The exact amount which is due to the action cannot be determined due to the lack of pre-action data.

Issue 17: One commenter criticized the EA for not having a section on the beneficial impacts of the action such as the better access to Lafayette Park and providing a more appropriate setting for one of our preeminent national symbols.

Response: Treasury agrees that there are many beneficial impacts resulting from the vehicular traffic restriction and attempted to describe them in qualitative terms in the EA. Most of these impacts are very difficult to assign dollar figures to and such an effort is not warranted at the EA level.

Issue 18: One commenter noted that the action is not consistent with the District's transportation plan, as outlined in the *Transportation Vision, Strategy and Action Plan for the Nation's Capital.*

Response: The action was taken to protect the White House Complex from explosive devices carried by vehicles near the perimeter. This action, while inharmonious with the transportation plan, is a necessary security precaution.

Issue 19: One commenter believes that there is sufficient pre-existing traffic data available from the District and the FHWA to allow for estimation of the action's effects.

Response: The EA used the above mentioned data and data from other sources and still could not identify a method for making the suggested estimation. FHWA was a cooperating agency for the EA.

Issue 20: One commenter citing anecdotal evidence from her constituents suggests that noise levels now are noticeably higher. This commenter also suggested that the methodology used for noise in the EA contains flaws and therefore failed to fully quantify the actual increase.

Response: The EA noise data was acquired using standard industry practices and equipment. It presents the actual dB readings taken at the time of the measurement in a scientifically accurate manner.

Issue 21: One commenter noted that the boundaries for the extended study area are appropriate for evaluating the project's effects.

Response: Treasury agrees.

Lawrence H. Summers,

Deputy Secretary.

[FR Doc. 97–25354 Filed 9–23–97; 8:45 am]

BILLING CODE 4810–25–P

DEPARTMENT OF THE TREASURY

Customs Service

Expansion of National Customs Automation Program Test Regarding Electronic Protest Filing

AGENCY: Customs Service, Treasury.

ACTION: General notice; expansion of program.

SUMMARY: This notice announces Customs plan to expand its program regarding the electronic filing of protests to encourage new participants. Also, public comments concerning any aspect of the test are solicited.

EFFECTIVE DATE: The testing period, which was scheduled to end on April 30, 1997, is now extended through December of 1997.

ADDRESSES: Written comments regarding this notice or any aspect of this test should be addressed to the Chief, Commercial Compliance Branch, U.S. Customs Service, 1301 Constitution Avenue, NW, Room 1313, Washington, DC 20229–0001.

FOR FURTHER INFORMATION CONTACT: For operational or policy issues: Neil Shannon, Chief, Commercial Compliance Branch, (202) 927–0300.

For protest system or automation issues: Steve Linnemann, Office of Information and Technology, (202) 927-0436.

SUPPLEMENTARY INFORMATION:

Background

On January 30, 1996, Customs published in the **Federal Register** (61 FR 3086) a general notice announcing, as part of the National Customs Automation Program (NCAP), a test regarding the electronic filing of protests. The test began on May 1, 1996, was to last six months, but was extended through April of 1997, when a second general notice was published on December 31, 1996, in the **Federal Register** (61 FR 69133). The test allows the following actions to be filed and tracked electronically:

(1) Protests against Customs decisions under 19 U.S.C. 1514

(2) Claims for refunds of duties deposited or for corrections of errors requiring reliquidation pursuant to 19 U.S.C. 1520 (c) and (d); and

(3) Interventions in an importer's protest by an exporter or producer of merchandise from a country that is a party to the North American Free Trade Agreement (NAFTA) under § 181.115 of the Customs Regulations (19 CFR 181.115).

Participation in this NCAP component is available to all interested parties. If you already are an ABI participant, you can take advantage of electronic protest immediately by contacting your local Customs Client Representative. If you are not an ABI participant, write a letter on your company's letterhead indicating your interest in electronic protest filing. The information provided should include your company's name, address, telephone number, and the name of a contact person. Send the letter to: U.S. Customs Service, Office of Information and Technology, User Support Services Division, Trade Support, Room 2419, 1301 Constitution Avenue, NW, Washington, DC 20229.

Expansion of Test

This notice informs the public that Customs is expanding the program for the electronic filing of protests to encourage new participants. Also, public comments concerning any aspect of the test are solicited.

Customs anticipates that this NCAP component will be available to all interested parties by January of 1998.

Dated: September 19, 1997.

Robert S. Trotter,

Assistant Commissioner, Office of Field Operations.

[FR Doc. 97–25341 Filed 9–23–97; 8:45 am]

BILLING CODE 4820–02–P

DEPARTMENT OF THE TREASURY

Internal Revenue Service

Privacy Act of 1974: Computer Matching Program

AGENCY: Internal Revenue Service, Treasury Department.

ACTION: Notice.

SUMMARY: Pursuant to 5 U.S.C. 552a, the Privacy Act of 1974, as amended, and the Office of Management and Budget (OMB) Guidelines on the Conduct of Matching Programs, notice is hereby given of the conduct of an Internal Revenue Service (IRS) computer match.

EFFECTIVE DATE: This notice will be effective October 24, 1997, unless comments dictate otherwise.

ADDRESS: Comments or inquiries may be mailed to Chief Inspector, Internal Revenue Service, 1111 Constitution Avenue, NW, Washington, DC 20224.

FOR FURTHER INFORMATION CONTACT: Mary Jacqueline Greening, Internal Auditor, Quality Assurance and Oversight Section, Office of Planning and Management, Office of Assistant Chief Inspector (Internal Audit), Internal Revenue Service, (202) 622–5911.

SUPPLEMENTARY INFORMATION: IRS management is responsible for discouraging the perpetration of irregular or illegal acts and limiting any exposure if an integrity breach occurs. To accomplish its mission, the Inspection Service assists management in achieving this objective by enhancing its conventional audit and investigative activities with a program designed to deter and detect such acts and to search for indicators of fraud sufficient to warrant investigation.

The Inspection Service's Integrity Program includes Integrity Projects, Integrity Tests, and national or other projects, including joint Internal Audit/Internal Security activities, designed to detect indicators of fraud and which focus specifically on the deterrence and detection of integrity breaches.

Integrity Projects are reviews or probes of specific high risk areas or transactions by the Inspection Service to detect material fraud and to assess the extent of integrity breaches that may have occurred.

Computer matching is the most feasible method of performing comprehensive analysis of employee, taxpayer, and tax administration data because of the large number of employees (seasonally varying to over 102,000), the geographic dispersion (nationwide) of IRS offices and employees, and the tremendous volume of computerized data that is available for analysis.

This computer match may be conducted in part or in its entirety by any or all of the Inspection Service's offices. The results of this match may be matched with County and/or State Lien records to identify any discrepancies and/or underlying fraudulent activity aimed at unauthorized lien releases.

NAME OF SOURCE AGENCY:

Internal Revenue Service.

NAME OF RECIPIENT AGENCY:

Internal Revenue Service.

BEGINNING AND COMPLETION DATES:

This computer match is targeted to commence in October, 1997 unless comments dictate otherwise. The program of computer matches will conclude at the end of the eighteenth month after the beginning date (April, 1999).

PURPOSE:

The purpose of this computer match is to identify employee misconduct (e.g., internal corruption through the exploitation of existing internal controls) that has resulted in improper lien releases and failure to adequately protect the government's interests.

AUTHORITY:

The Office of Chief Inspector was established and provided the authority to perform character and conduct investigations of IRS employees pursuant to 31 U.S.C. 321(b); sections 7801(a), 7802, and 7803 of the Internal Revenue Code of 1986; 26 U.S.C. 7804 and Reorganization Plan Number 1 of 1952.

Commissioner's reorganization Order #Hdq–1 (July 29, 1952), IR-Mimeograph Number 236 (December 7, 1953), and the current provisions of the Internal Revenue Manual (IRE) give authority to conduct personnel investigations to the Chief Inspector.

Internal Revenue Manual 1161 charges the Chief Inspector with carrying out a program for assisting management to maintain the highest standards of honesty and integrity among its employees.

The United States General Accounting Office field work standards for both performance and financial audits require auditors to design an audit to provide reasonable assurance of detecting abuse of illegal acts that could significantly affect the financial statements, audit objectives, or audit results.

CATEGORIES OF INDIVIDUALS COVERED:

Current and former employees of the IRS.

CATEGORIES OF RECORDS COVERED:

1. Information regarding Lien Files (Open and Closed) [Treasury/IRS 26.009].
2. Information regarding taxpayers, tax returns, and tax return information.
   a. Individual Master File (IMF) (Treasury/IRS 24.030).
   b. Business Master File (BMF) (Treasury/IRS 24.046).
3. Information regarding IRS employees (General Personnel and Payroll-Treasury/IRS 36.003)
4. Information regarding County and/or State Lien Filing and Lien Release Records.

Dated: September 17, 1997.

Alex Rodriguez,

Deputy Assistant Secretary (Administration).

[FR Doc.97–25279 Filed 9–23–97; 8:45am]

Billing Code: 4830–01–F

Federal Register

Wednesday
September 24, 1997

Part II

Railroad Retirement Board

20 CFR Part 220
Determining Disability; Proposed Rule

RAILROAD RETIREMENT BOARD

20 CFR Part 220

RIN 3220–AB18

Determining Disability

AGENCY: Railroad Retirement Board.

ACTION: Proposed rule.

SUMMARY: The Board proposes to amend its regulations in order to adopt standards for determining when an employee is disabled for his or her regular railroad occupation.

DATES: Comments should be submitted on or before October 24, 1997.

ADDRESSES: Secretary to the Board, Railroad Retirement Board, 844 North Rush Street, Chicago, Illinois 60611.

FOR FURTHER INFORMATION CONTACT: Thomas W. Sadler, Senior Attorney, Railroad Retirement Board, 844 North Rush Street, Chicago, Illinois 60611, (312) 751–4513, TDD (312) 751–4701.

SUPPLEMENTARY INFORMATION: Section 2(a)(2) of the Railroad Retirement Act (45 U.S.C. 231a(a)(2)) provides that the Board, with the cooperation of employers and employees, shall secure the establishment of standards determining the physical and mental conditions which permanently disqualify employees from performing work in the railroad industry. The Board has never formally adopted such standards. The agency, in the past, has used provisional standards which were adopted in 1946 but which are now outdated. In 1991 the Board adopted Subpart C of Part 220 which provides for determining disability for work in an employee's regular railroad occupation. Under these regulations if an employee's physical or mental condition does not meet a listing found in Appendix 1 of Part 200 (which determines if an individual is able to engage in any employment both within and outside the railroad industry) then the Board determines the employee's residual functional capacity and compares that to the demands of his or her regular railroad occupation to determine if the employee can continue to perform that job. However, Subpart C contains no specific standards which relate to specific railroad occupations. The Board proposes to amend Subpart C to add such standards with respect to certain railroad occupations.

Proposed § 220.10 provides for the establishment of an Occupational Disability Advisory Committee made up of two physicians, one from recommendations from rail labor, one from rail management. This committee shall review from time to time the disability standards developed by this regulation and the Occupational Disability Claims Manual (Manual) which supplements this regulation. The Board shall confer with this Committee before it amends this regulation or the Manual.

Proposed § 220.11 contains the definitions of ''regular railroad occupation'', ''permanent physical and mental impairment'', and ''residual functional capacity'' as presently found in part 220. In addition, it adds the definitions of ''independent case evaluation'' and ''functional capacity test.''

The current § 220.12 is proposed to be removed, and the current § 220.14 ''Evidence Considered'' is proposed to be redesignated § 220.12.

The introductory language and paragraph (a) of proposed § 220.13 follows the present regulation and describes the sequential evaluation process for determining disability for an employee's regular railroad occupation. Initially, if an employee has been medically disqualified by his employer, the Board will presume that the employee is disabled for his regular railroad occupation if there is any objective medical evidence to support that determination. If the employee has not been so disqualified, the Board will determine if the employee's impairment(s) meet or equal a listing found in Appendix 1.

Proposed § 220.13(b)(1) provides that if an employee has not been found disabled in the first two steps described above, the Board will then determine the employee's regular railroad occupation, based only upon the employee's description of his or her job.

Proposed § 220.13(b)(2)(i) provides that next the Board will determine if an employee's regular railroad occupation and impairment(s) are covered under the standards contained in a new Appendix 3 to Part 220. If both the occupation and impairment(s) are covered, the Board will confirm the existence of the impairment(s) using valid diagnostic tests set forth in Appendix 3. (Proposed § 220.13(b)(2)(ii).) Once the impairment(s) is confirmed, Appendix 3 is applied to determine if the employee is disabled. (Proposed § 220.13(b)(2)(iii).)

If the employee's regular railroad occupation and impairment(s) are not covered by Appendix 3, or if the medical evidence contains significant differences in interpretation of objective test findings which cannot be readily resolved, then the Board will not use Appendix 3, but will determine if the employee is disabled using an independent case evaluation (ICE) as set forth in proposed § 220.13(b)(2)(iv). Likewise, if Appendix 3 does not yield a ''disabled'' finding ICE will apply.

Proposed § 220.13(b)(2)(iv), which describes ICE, is essentially a more detailed description of the process which is described in § 220.13(b)(3) of the present regulation. Under this process the Board initially determines whether the evidence is complete (Step 1). The Board next confirms any impairment which has not been confirmed under proposed § 220.13(b)(2)(ii) (Step 2). Next, the Board will determine whether there is a concordance of medical findings among physicians. If there is not, the Board will request additional medical evidence from the employee's treating physician(s) or procure additional consulting exams (Step 3). Once the Board establishes a concordance of medical findings, to the extent that it is possible, it will then assess the quality of the medical evidence under the factors set forth in proposed § 220.14. This section sets forth factors which either support or call into question the validity of the medical findings. Thus, for example, the opinion of a treating physician, which is fully supported by medically acceptable clinical and diagnostic techniques, is given greater weight than one that is not so supported or is inconsistent with findings of other medical sources. Likewise, the claimant's description of his or her own condition, if consistent with objective medical findings, is given more weight than one that is not consistent. (Step 4). If, after assessment, the Board determines that there is no substantial objective evidence of an impairment, the Board will determine the employee is not disabled.

If through the assessment in Step 4 it is determined that there is substantial objective evidence of an impairment, then in Step 5 the Board will determine the demands of the employee's regular railroad occupation. At this point, the Board will not only consider the employee's own description of his or her job, but also the employer's description as well as other sources such as the Dictionary of Occupational Titles and generic descriptions, found in the Occupational Disability Claims Manual.

Next, the Board will determine the employee's residual functional capacity based upon the assessment performed in Step 4 and compare it to the job demands determined in Step 5. If the demands of the employee's regular railroad occupation exceed the employee's residual functional capacity, then the Board will find the employee

disabled. If the demands do not exceed the residual functional capacity, then the Board will find the employee not disabled (Step 6).

The Board has determined that this is a significant rule under Executive Order 12866.

Proposed section 220.13(b)(2)(iv)(E) contains information collection requirements. As required by the Paperwork Reduction Act of 1995 (44 U.S.C. 3507(d)), the Board has submitted a copy of this section to the Office of Management and Review (OMB) for its review.

Collection of Information: Job Information Report. This proposed rule would offer the applicant's railroad employer the opportunity to voluntarily provide information on the applicant's job duties which may be utilized in determining the applicant's eligibility to an occupational disability. Two forms are proposed for this purpose. One form, G–251a, Employer Job Information (job description), would be used when a generic job description has been developed for the job the applicant claims to be his regular job; the other form (G–251b), Employer Job Information (general), would be used when no generic job description has been developed. The RRB estimates that each form takes 20 minutes to complete, and that of the estimated 3,500 forms that would be sent to the applicants' railroad employers annually, 1,750 (or 50 percent) will be completed and returned. The annual burden imposed as a result of this proposed rule would be 584 hours (1,750 responses × ⅓ hour per response).

Organizations and individuals desiring to submit comments on the information collection requirements should direct them to Laura Oliven, the Office of Information and Regulatory Affairs, Office of Management and Budget, New Executive Office Building, 226 Jackson Place, NW., Room 10235, Washington, D.C. 20503 and to Ronald J. Hodapp, Railroad Retirement Board, 844 North Rush Street, Chicago, Illinois, 60611–2092.

The RRB considers comments by the public on this proposed collection of information in—

(a) Evaluating whether the proposed collection of information is necessary for the proper performance of the functions of the RRB, including whether the information will have a practical use;

(b) Evaluating the accuracy of the RRB's estimate of the burden on the proposed collection of information, including the validity of the methodology and assumptions used;

(c) Enhancing the quality, usefulness, and clarity of the information to be collected; and

(d) Minimizing the burden of collection of information on those who are to respond, including the use of appropriate electronic, mechanical, or other automated collection techniques.

OMB is required to make a decision concerning the collection of information contained in these proposed regulations between 30 and 60 days after publication of this document in the **Federal Register**. Therefore, a comment to OMB is best assured of having its full effect if OMB receives it within 15 days of publication. This does not affect the deadline for the public to comment to the RRB on the proposed regulations.

List of Subjects in 20 CFR Part 220

Disability benefits, Railroad employees, Railroad retirement.

PART 220—DETERMINING DISABILITY

For the reasons set forth in the preamble, Part 220 of Title 20 of the Code of Federal Regulations is proposed to be amended as follows:

1. The authority for Part 220 continues to read as follows:

Authority: 45 U.S.C. 231a; 45 U.S.C. 231f.

2. The title of Subpart C, is revised to read as follows: ''Subpart C—Disability Under the Railroad Retirement Act for Work in an Employee's Regular Railroad Occupation''.

3. Section 220.10 is revised to read as follows:

§ 220.10 Disability for work in an employee's regular railroad occupation.

(a) In order to receive an occupational disability annuity an eligible employee must be found by the Board to be disabled for work in his or her regular railroad occupation because of a permanent or physical or mental impairment. In this subpart the Board describes in general terms how it evaluates a claim for an occupational disability annuity. In accordance with section 2(a)(2) of the Railroad Retirement Act this subpart was developed with the co-operation of employers and employees. This subpart is supplemented by an Occupational Disability Claims Manual (Manual) which was also developed with the co-operation of employers and employees.

(b) In accordance with section 2(a)(2) of the Railroad Retirement Act, the Board shall select two physicians, one from recommendations made by representatives of employers and one from recommendations made by representatives of employees. These individuals shall comprise the Occupational Disability Advisory Committee (Committee). This Committee shall periodically review, as necessary, this subpart and the Manual and make recommendations to the Board with respect to amendments to this subpart or to the Manual. The Board shall confer with the Committee before it amends either this subpart or the Manual.

4. Section 220.11 is revised to read as follows:

§ 220.11 Definitions as used in this subpart.

Functional capacity test means one of a number of tests which provide objective measures of a claimant's maximal work ability and includes functional capacity evaluations which provide a systematic comprehensive assessment of a claimant's overall strength, mobility, and endurance and capacity to perform physically demanding tasks, such as standing, walking, lifting, crouching, stooping or bending, climbing or kneeling.

Independent Case Evaluation (ICE) means the process for evaluating claims not covered by Appendix 3 of this part.

Regular railroad occupation means an employee's railroad occupation in which he or she has engaged in service for hire in more calendar months than the calendar months in which he or she has been engaged in service for hire in any other occupation during the last preceding five calendar years, whether or not consecutive; or has engaged in service for hire in not less than one-half of all of the months in which he or she has been engaged in service for hire during the last preceding 15 consecutive calendar years. If an employee last worked as an officer or employee of a railway labor organization and if continuance in such employment is no longer available to him or her, the ''regular occupation'' shall be the position to which the employee holds seniority rights or the position which he or she left to work for a railway labor organization.

Permanent physical or mental impairment means a physical or mental impairment or combination of impairments that can be expected to result in death or has lasted or can be expected to last for a continuous period of not less than 12 months.

Residual functional capacity has the same meaning as found in § 220.120 of this part.

5. The current § 220.12 ''Permanent physical or mental impairment, defined.'' is removed, and § 220.14 ''Evidence Considered.'' is redesignated as § 220.12.

§ 220.13 [Amended]

6. Section 220.13 is amended by revising the section heading, the introductory text and paragraph (b) to read as follows:

§ 220.13 Establishment of permanent disability for work in regular railroad occupation.

The Board will presume that a claimant who is not allowed to continue working for medical reasons by his employer has been found, under standards contained in this subpart, disabled unless the Board finds that no person could reasonably conclude on the basis of evidence presented that the claimant can no longer perform his or her regular railroad occupation for medical reasons. (See § 220.21 if the claimant is not currently disabled, but was previously occupationally disabled for a specified period of time in the past). The Board uses the following evaluation process in determining disability for work in the regular occupation:

(a) * * *

(b) If the Board finds that the claimant does not have an impairment described in (a) above, it will—

(1) Determine the employee's regular railroad occupation, as defined in § 220.11 of this part, based upon the employee's own description of his or her job;

(2) Evaluate whether the claimant is disabled as follows:

(i) The Board first determines whether the employee's regular railroad occupation is an occupation covered under Appendix 3 of this part. Second, the Board will determine whether the employee's claimed impairment(s) is covered under Appendix 3 of this part. If claimant's regular railroad occupation or impairment(s) is not covered under Appendix 3 of this part, then the Board will determine if the employee is disabled under ICE as set forth in paragraph (b)(2)(iv) of this section.

(ii) If the Board determines that, in accordance with paragraph (b)(2)(i) of this section, Appendix 3 of this part applies, then the Board will confirm the existence of the employee's impairment(s) using valid diagnostic tests accepted by the medical community as set forth in Appendix 3 of this part. See also § 220.27 of this part. Once the Board determines that Appendix 3 of this part applies, only in situations where there are significant differences in objective tests such as imaging study, electrocardiograms or other test results, and these differences cannot be readily resolved, will the Board determine if the employee is disabled under the ICE as set forth in paragraph (b)(2)(iv) of this section.

(iii) Once the impairment(s) is confirmed, as provided for in paragraph (b)(2)(ii) of this section, the Board will apply Appendix 3 of this part. If Appendix 3 of this part dictates a ''D'' finding, the Board will find the claimant disabled.

(iv) If the Board does not find the employee disabled using the standards in Appendix 3 of this part, then the Board will determine if the employee is disabled using ICE. To evaluate a claim under ICE the Board will use the following steps:

(A) *Step 1.* The Board will determine if the medical evidence is complete. Under this step the Board may request the claimant to take additional medical tests such as a functional capacity test or other consultative examinations;

(B) *Step 2.* If the employee's impairments(s) has not been confirmed, as provided for in paragraph (b)(2)(ii) of this section, the Board will next confirm the employee's impairment(s), as described in paragraph (b)(2)(ii) of this section;

(C) *Step 3.* The Board will determine whether the opinions among the physicians regarding medical findings are consistent, by reviewing the employee's medical history, physical and mental examination findings, laboratory or other test results, and other information provided by the employee or obtained by the Board. If such records reveal that there are significant differences in the medical findings, significant differences in opinions concerning the residual functional capacity evaluations among treating physicians, or significant differences between the results of functional capacity evaluations and residual functional capacity examinations, then the Board may request additional evidence from treating physicians, additional consultative examinations and/or residual functional capacity tests to resolve the inconsistencies;

(D) *Step 4.* When the Board determines that there is concordance of medical findings, then the Board will assess the quality of the evidence in accordance with § 220.112 of this part, which describes the weight to be given to the opinions of various physicians, and § 220.114 of this part, which describes how the Board evaluates symptoms such as pain. The Board will also assess the weight of evidence by utilizing § 220.14 of this part which outlines factors to be used in determining the weight to be attributed to certain types of evidence. If, after assessment, the Board determines that is no substantial objective evidence of an impairment, the Board will determine that the employee is not disabled.

(E) *Step 5.* Next, the Board determines the physical and mental demands of the employee's regular railroad occupation. In determining the job demands of the employee's regular railroad occupation, the Board will not only consider the employee's own description of his or her regular railroad occupation, but shall also consider the employer's description of the physical requirements and environmental factors relating the employee's regular railroad occupation, as provided by the employer on the appropriate form set forth in Appendix 3 of this part, and consult other sources such as the Dictionary of Occupational Titles and the job descriptions of occupations found in the Occupational Disability Claims Manual, as provided for in § 220.10 of this part.

(F) *Step 6.* Based upon the assessment of the evidence in paragraph (b)(2)(iv) of this section, the Board shall determine the employee's residual functional capacity. The Board will then compare the job demands of the employee's regular railroad occupation, as determined in paragraph (b)(2)(iv)(E) of this section. If the demands of the employee's regular railroad occupation exceed the employee's residual functional capacity, then the Board will find the employee disabled. If the demands do not exceed the employee's residual functional capacity, then the Board will find the employee not disabled.

7. A new section 220.14 is added to read as follows:

§ 220.14 Weighing of Evidence.

(a) *Factors which support greater weight.* Evidence will generally be given more weight if it meets one or more of the following criteria:

(1) The residual functional capacity evaluation is based upon functional objective tests with high validity and reliability;

(2) The medical evidence shows multiple impairments which have a cumulative effect on the employee's residual functional capacity;

(3) Symptoms associated with limitations are consistent with objective findings;

(4) There exists an adequate trial of therapies with good compliance, but poor outcome;

(5) There exists consistent history of conditions between treating physicians and other health care providers.

(b) *Factors which support lesser weight.* Evidence will generally be given lesser weight if it meets one or more of the following criteria:

(1) There is an inconsistency between the diagnoses of the treating physicians;

(2) There is inconsistency between reports of pain and functional impact;

(3) There is inconsistency between subjective symptoms and physical examination findings;

(4) There is evidence of poor compliance with treatment regimen, keeping appointments, or cooperating with treatment;

(5) There is evidence of exam findings which are indicative of exaggerated or potential malingering response;

(6) The evidence consists of objective findings of exams that have poor reliability or validity;

(7) The evidence consists of imaging findings which are nonspecific and largely present in the general population;

(8) The evidence consists of a residual functional capacity evaluation which is supported by limited objective data without consideration for functional capacity testing.

Appendix 3—Railroad Retirement Board Occupational Disability Standards

8. Appendix 3—Railroad Retirement Board Occupational Disability Standards is added to part 220 to read as follows:

BILLING CODE 7905–01–P

Appendix 3 to Part 220—Railroad Retirement Board Occupational Disability Standards

Form Approved
OMB No. 3220-xxxx

JOB INFORMATION FORM

RRB Claim Number
Employee's Name
Date Released
Regular Railroad Occupation*
Location
Date Last Worked

* The regular railroad occupation is: 1) the occupation in which the employee has been engaged for more calendar months than any other occupation during the last preceding 5 calendar years, whether consecutive or not; or 2) the occupation which the employee has been in service for not less than one-half of all months in which the employee has been engaged in service during the last 15 consecutive calendar years; or 3) if an employee last worked as an officer or employee of a railway labor organization and if that employment is no longer available, the regular occupation shall be the position to which the employee holds seniority rights or the position left to work for the railway labor organization.

The above-named railroad employee has applied for an occupational disability benefit under section 2(a)(1)(iv) of the Railroad Retirement Act. Railroad Retirement Board (RRB) regulation 20 CFR 220.13 (b)(2) provides that railroad employers may furnish pertinent information concerning the job duties the employee is required to perform. If you wish to provide job duty information on the above-named employee, it must be received by the RRB no later than _____.

EMPLOYER INFORMATION

The attached list of job duties indicate those duties generally performed by the employee.

Please provide any additional information on the duties the employee performed over the last 5 years, or 15 years if appropriate.

This information can be entered in the Remarks section or attached to this form.

G-251a(XX-XX)

Job information should be sent to:

U.S. RAILROAD RETIREMENT BOARD
844 NORTH RUSH STREET
CHICAGO, ILLINOIS 60611-2092
ATTENTION: DISABILITY PROGRAMS SECTION

or a facsimile may be sent to (312)751-7167.

Employer Certification - The information contained in this report is correct to the best of my knowledge and belief.

NAME _____ SIGNATURE _____
(Please Print)
TITLE _____ DATE ____/____/____
(Please Print)
TELEPHONE NO (____) _____

Remarks:

Paperwork Reduction Act Notice

Section 7 (b)(6) of the Railroad Retirement Act (RRA) allows the Railroad Retirement Board (RRB) to collect this information. While you are not required to respond, the information you provide will be used by the RRB in determining an applicant's eligibility for an occupational disability under the RRA.

We estimate that this form takes an average of 20 minutes per response to complete, including the time for reviewing the instructions, getting the needed data, and reviewing the completed form. *Federal agencies may not conduct or sponsor, and respondents are not required to respond to, a collection of information unless it displays a valid OMB number.* If you wish, send comments regarding the accuracy of our estimate or any other aspects of this form, including suggestions for reducing the completion time to: Chief of Information Management, Railroad Retirement Board, 844 North Rush Street, Chicago, IL 60611-2092 and to the Office of Management and Budget, Paperwork Reduction Project (3220-XXXX), Washington DC 20503. Please do **not** return this form to either of these addresses.

G-251a(XX-XX)

Form Approved
OMB No. 3220-xxxx

JOB INFORMATION FORM

RRB Claim Number
Employee's Name
Date Released
Regular Railroad Occupation*
Location
Date Last Worked

* The regular railroad occupation is: 1) the occupation in which the employee has been engaged for more calendar months than any other occupation during the last preceding five calendar years, whether consecutive or not; or 2) the occupation which the employee has been in service for not less than one-half of all months in which the employee has been engaged in service during the last 15 consecutive calendar years; or 3) if an employee last worked as an officer or employee of a railway labor organization and if that employment is no longer available, the regular occupation shall be the position to which the employee holds seniority rights or the position left to work for the railway labor organization.

The above-named railroad employee has applied for an occupational disability benefit under section 2(a)(1)(iv) of the Railroad Retirement Act. Railroad Retirement Board (RRB) regulation 20 CFR 220.13 (b)(2) provides that railroad employers may furnish pertinent information concerning the job duties the employee is required to perform. If you wish to provide job duty information on the above-named employee, it must be received by the RRB no later than _____.

EMPLOYER INFORMATION

You may wish to provide the RRB with job duty information. If so, the job information that is needed for a disability decision should include a full description of the basic duties to perform the occupation listed. For example, list the types of machinery, tools and/or equipment used, technical knowledge or skills involved, and number of people supervised. Also include the types of physical activities involved in a typical 8 hour work day, such as how many hours of walking, standing or sitting, what items are lifted and carried and how much these items weigh, and how often bending, crouching, kneeling, reaching and climbing are performed. If exposure to environmental hazards, such as working at heights or around dangerous machinery, in extreme temperatures or excessive noise are present, also list these.

This information can be entered in the Remarks section or attached to this form.

Job information should be sent to:

U.S. RAILROAD RETIREMENT BOARD
844 NORTH RUSH STREET
CHICAGO, ILLINOIS 60611-2092
ATTENTION: DISABILITY PROGRAMS SECTION

or a facsimile may be sent to (312)751-7167.

Employer Certification - The information contained in this report is correct to the best of my knowledge and belief.

NAME _____ SIGNATURE _____
(Please Print)
TITLE _____ DATE ____/____/____
(Please Print)
TELEPHONE NO (____) _____

Remarks:

Paperwork Reduction Act Notice

Section 7 (b)(6) of the Railroad Retirement Act (RRA) allows the Railroad Retirement Board (RRB) to collect this information. While you are not required to respond, the information you provide will be used by the RRB in determining an applicant's eligibility for an occupational disability under the RRA.

We estimate that this form takes an average of 20 minutes per response to complete, including the time for reviewing the instructions, getting the needed data, and reviewing the completed form. *Federal agencies may not conduct or sponsor, and respondents are not required to respond to, a collection of information unless it displays a valid OMB number.* If you wish, send comments regarding the accuracy of our estimate or any other aspects of this form, including suggestions for reducing the completion time to: Chief of Information Management, Railroad Retirement Board, 844 North Rush Street, Chicago, IL 60611-2092 and to the Office of Management and Budget, Paperwork Reduction Project (3220-XXXX), Washington DC 20503. Please do **not** return this form to either of these addresses.

G-251b (XX-XX)

BILLING CODE 7905–01–C

A. Cancer

Cancer

Cancer conditions can be viewed as belonging to one of three categories.
Category 1: Significant impact on functional capacity or anticipated life span.
Category 2: Intermediate impact on functional capacity; large individual variability.
Category 3: No significant impact on functional capacity or expected life span.
The factors that are considered in developing these categories include the following:

Type of Cancer

The functional impact of different malignancies varies tremendously and each malignancy has to be considered on an individual basis.

Magnitude of Disease

The disability standards are based upon the magnitude or extent of disease. The extent of disease affects both anticipated life span and the functional capacity or work ability of the individual. Localized cancer including cancer ''in situ'' can frequently be completely cured and not have an impact on functional capacity or life span. In contrast, many cancers that have distant or significant regional spread generally have a poor prognosis. The magnitude or extent of disease is classified into three categories: local, regional and distant.

The criteria which are used to classify a cancer into one of the three categories are based upon the distillation of several staging methods into a single system [Miller, et al. (1992). *Cancer Statistics Review,* 1973–1989; NIH Publication No. 92–2789].

Effects of Treatment

Although some types of cancer may be potentially curable with radical surgery and/or radiation therapy, the treatment regimen may result in a significant impairment that could affect functional capacity and ability to work. For example, a person with a laryngeal tumor which had spread regionally could be cured by a complete laryngectomy and radiotherapy. However, this treatment could result in a loss of speech and significantly impair the individual's communicative skills or ability to use certain types of respiratory protective equipment.

Prognosis

Some cancers may have minimal impact on a person's functional capacity, but have a very poor prognosis with respect to life expectancy. For example, an individual with early stage brain cancer may be minimally impaired, but have a poor prognosis and minimal potential for surviving longer than two years. Five and two year survival data are presented in the Cancer Disability Guideline Table which follows.

The Cancer Disability Guideline Table provides information concerning the probability of survival for five years for local, regional, and distant disease for each type of malignancy. In addition, two-year survival data are also presented for all disease stages. The five-year survival data are based upon data collected from population-based registries in Connecticut, New Mexico, Utah, Hawaii, Atlanta, Detroit, Seattle and the San Francisco and East Bay area between 1983 and 1987 (Miller, 1992). The two-year data are from a cohort study initially diagnosed in 1988.

Assessment

The malignancies which are classified as disabling (Category 1), potentially disabling (Category 2) and non-disabling (Category 3). Category 2 conditions must be evaluated with respect to how the worker's tumor affects the worker's ability to perform the job and an assessment of his life span.

Information concerning the potential impact of the malignancy on a worker's ability to perform a job is identified in the Functional Impact column in the table. All railroad occupations are considered together. Functional impacts are classified as significant if the treatment or sequelae from treatment including radiotherapy, chemotherapy and/or surgery is likely to impair the worker from performing the job. If the treatment results in a significant impairment of another organ system, the individual should be evaluated for disability associated with impairment of that body part. For example, a person undergoing an amputation for a bone malignancy would have to be evaluated for an amputation of that body part. For many cancers, it is difficult to make generalizations regarding the level of impairment that will occur after the person has initiated or completed treatment. Nonsignificant impacts include those that are unlikely to have any effect on the individual's work capacity.

Cancer type	2-year [1]	5-year [1]	Disability status [2]	Functional impact [3]
Brain:				
Local	.....	26	1	S
Regional	.....	27.9	1	S
Distant	.....	23.6	1	S
Female Breast:				
Regional	.....	71.1	2	S
Distant	.....	17.8	1	S
Colon:				
Local	.....	91	2	S
Regional	.....	60.1	2	S
Distant	.....	6	1	S
Rectal:				

Cancer type	2-year [1]	5-year [1]	Disability status [2]	Functional impact [3]
Local		84.5	2	S
Regional		50.7	2	S
Distant		5.3	1	S
Esophagus:				
Local		18.5	1	S
Regional		5.2	1	S
Distant		1.8	1	S
Hodgkin's Disease: [4]				
Stage 1		90–95	3	S
Stage 2		86	2	S
Stage 3		<80	2	S
Stage 4		<80	1	S
Kidney/Renal Pelvis:				
Local		85.4	3	S
Regional		56.3	2	S
Distant		9	1	S
Larynx:				
Local		84.2	2	S
Regional		52.5	2	S
Distant		24	1	S
Acute Lymphocytic Leukemia:				
All		51.1	2	S
Chronic Lymphocytic Leukemia:				
All		66.2	2	S
Acute Myelogenous Leukemia:				
All		9.7	1	S
Chronic Myelogenous Leukemia:				
All		21.7	1	S
Liver/Intrahepatic Bile Duct:				
Local		15.1	1	S
Regional		5.8	1	S
Distant		1.9	1	S
Lung/Bronchus: [6]				
Local		45.6	2	S
Regional		13.1	1	S
Distant		1.3	1	S
Melanomas of Skin:				
Regional		53.6	2	S
Distant		12.8	1	S
Oral Cavity/Pharyngeal:				
Local		76.2	2	S
Regional		40.9	2	S
Distant		18.7	1	S
Pancreas:				
Local		6.1	1	S
Regional		3.7	1	S
Distant		1.4	1	S
Prostate:				
Local		91	3	S
Regional		80.4	2	S
Distant		28	1	S
Stomach:				
Local		55.4	1	S
Regional		17.3	1	S
Distant		2.1	1	S
Testicular:				
Distant		65.5	1	S
Thyroid:				
Regional		93.1	3	S
Distant		47.2	1	S
Bladder:				
Regional		46	2	S
Distant		9.1	1	S

[1] Source of 2 and 5 year survival data: Miller BA et al. Cancer Statistics Review 1973–1989. NIH Publication No. 92–2789.

[2] Disability Status:
Category 1: Significant impact on functional capacity or life span.
Category 2: Intermediate impact.
Category 3: No significant impact on functional capacity or life span.

[3] Functional Impacts:
(S) Significant—significant potential for the effects of treatment (radiotheraphy, chemotherapy. surgery) to affect functional capacity.
(MS) Minimally Significant—minimal potential for effects of treatment to affect functional capacity.

[4] Hodgkin's disease data presented for each stage derived from American Cancer Society. American Cancer Society Textbook reference for unstaged cancer is derived from Cancer Statistics Review (See 3). In addition to other data, see: American Cancer Society Textbook of Clinical Oncology. Eds: Holleb AI, Fink DJ, Murphy GP, Atlanta: American Cancer Society, Inc. 1991.)

[5] There can be considerable variability between differing lymphomas. Each cell type needs to be evaluated on an individual basis.
[6] Small cell carcinoma is classified as a 1.

B. Endocrine

Confirmatory test	Minimum result	Requirements
BODY PART: ENDOCRINE CONFIRMATORY CONFIRMATORY TESTS		
Diabetes, requring insulin (IDDM):		
Medical record review	Confirmation of condition and need for insulin use	Highly recommended.

Disability test	Test result	Disability classification
BODY PART: ENDOCRINE JOB TITLE: ENGINEER		
Diabetes, requiring insulin (IDDM):		
Medical record review	Confirmation of condition and need for insulin use	D

C. Cardiac

Confirmatory test	Minimum result	Requirements
BODY PART: CARDIAC CONFIRMATORY TESTS		
Angina:		
Medical record review	Confirmed history of ischemia including copies of electrocardiogram.	Recommended.
Stress test	Definite ischemia on exercise test	Recommended.
Thallium study	Definite ischemia with exercise	Recommended.
Aortic valve disease:		
Cardiac catheterization	Proven and significant	Recommended.
Echocardiogram	Significant valve disease	Recommended.
Coronary artery disease:		
Medical record review	Documented ischemia with electrocardiogram confirmation.	Recommended.
Medical record review	Documented myocardial infarction	Recommended.
Stress test	Positive	Recommended.
Thallium study	Definite ischemia with exercise	Recommended.
Angiography	Definite significant (>60%) of one vessel	Recommended.
Cardiomyopathy:		
Echocardiogram	Proven ejection fraction <50%	Recommended.
Catheterization	Poor global function and not coronary artery disease	Recommended.
Hypertension:		
Medical record review	Documentation of hypertension for one year	Highly recommended.
Medical record review	Definite diagnosis by cardiologist or internist	Highly recommended.
Medical record review	Confirmation of medication use	Highly recommended.
Arrhythmia: heart block:		
Medical record review	Proven episode with electrocardiogram confirmation	Recommended.
Electrocardiogram	Documentation of arrhythmia	Recommended.
Mitral valve disease:		
Cardiac catheterization	Significant valve disease	Recommended.
Echocardiogram	Significant valve disease	Recommended.
Pericardial disease:		
Medical record review	Confirmed by cardiologist or internist	Highly recommended.
Pulmonary hypertension:		
Physical examination	Increased pulmonic sound or pulmonary ejection murmur by cardiologist or internist.	Recommended.
Electrocardiogram	Definite right ventricular hypertension	Highly recommended.
Ventricular ectopy:		
Medical record review	Definite episode within one year	Recommended.
Holter monitoring	Definite arrhythmia	Recommended.
Provocative testing	Positive response	Recommended.
Arrhythmia: supraventricular tachycardia:		
Medical record review	Definite episode within one year	Recommended.
Holter monitoring	Definite arrhythmia	Recommended.
Post heart transplant:		
Medical record review	Documented	Highly recommended.

Disability test	Test result	Disability classification
BODY PART: CARDIAC JOB TITLE: TRAINMAN		
Angina:		
Echocardiogram	Decreased ejection fraction 40–55%	D
Echocardiogram	Poor ejection fraction <35%	D
Stress test	Peak exercise 5–7 METS	D
Stress test	Peak exercise <5 METS	D
Medical record review	Unstable as diagnosed by cardiologist	D
Stress test	Documented hypotensive response	D
Stress test	Definite ischemia <7 METS	D
Stress test	Definite ischemia >7 METS	D
Aortic valve disease:		
Cardiac catheterization	Aortic gradient 25–50 mm HG.	
Echocardiogram	Decreased ejection fraction 40–55%	D
Echocardiogram	Poor ejection fraction <35%	D
Stress test	Peak exercise 5–7 METS	D
Stress test	Peak exercise <5 METS	D
Coronary artery disease:		
Myocardial infraction	Multiple infarctions	D
Echocardiogram	Confirmed ventricular aneurysm	D
Cardiac catheterization	Aortic gradient 25–50 mm Hg	D
Cardiac catheterization	Decreased ejection fraction 40–55%	D
Cardiac catheterization	Poor ejection fraction <35%	D
Stress test	Peak exercise 5–7 METS	D
Stress test	Peak exercise <5 METS	D
Medical record review	Unstable as diagnosed by a Cardiologist	D
Stress test	Documented hypotensive response	D
Stress test	Definite ischemia < or >7 METS	D
Isotope, e.g., thallium study	Definite ischemia < or >7 METS	D
Cardiomyopathy:		
Cardiac catheterization	Decreased ejection fraction 40–55%	D
Cardiac catheterization	Poor ejection fraction <35%	D
Echocardiogram	Decreased ejection fraction 40–55%	D
Echocardiogram	Poor ejection fraction <35%	D
Stress test	Peak exercise 5–7 METS	D
Hypertension:		
Medical record review	Diastolic >120 and systolic >160, 50% of the time	D
Medical record review	Diastolic >120 and systolic >160, 50% of the time and evidence of end organ damage (blood creatinine >2; urinary protein >½ gm; or EKG evidence of ischemia).	D
Arrhythmic: heart block:		
Holter	Documented asystole length >1.5–2 seconds	D
Medical record review	Documented syncope with proven arrhythmia	D
Mitral valve disease:		
Cardiac catheterization	Mitral valve gradient 5–10 mm Hg	D
Cardiac catheterization	Mitral valve gradient >10 mm Hg	D
Cardiac catheterization	Mitral regurgitation severe	D
Cardiac catheterization	Decreased ejection fraction 50–55%	D
Cardiac catheterization	Poor ejection fraction <35%	D
Echocardiogram	Poor ejection fraction <35%	D
Echocardiogram	Decreased ejection fraction 40–55%	D
Stress test	Peak exercise 5–7 METS	D
Pericardial disease:		
Cardiac catheterization	Decreased ejection fraction 40–55%	D
Cardiac catheterization	Poor ejection fraction <35%	D
Echocardiogram	Decreased ejection fraction 40–55%	D
Echocardiogram	Poor ejection fraction <35%	D
Ventricular ectopy:		
Medical record review	Documented life threatening arrhythmia	D
Medical record review	Surgical rhythm procedure	D
Holter	Uncontrolled ventricular rhythm	D
Medical record review	Documented related syncope	D
Arrhythmia: supraventricular tachycardia:		
Medical record review	Documented related syncope	D
Post heart transplant:		
Medical record review	Post heart transplant	D
BODY PART: CARDIAC JOB TITLE: ENGINEER		
Angina:		
Echocardiogram	Decreased ejection fraction 40–55%	D
Echocardiogram	Poor ejection fraction <35%	D

Disability test	Test result	Disability classification
Stress test	Peak exercise 5–7 METS	D
Stress test	Peak exercise <5 METS	D
Medical record review	Unstable as diagnosed by cardiologist	D
Stress test	Documented hypotensive response	D
Stress test	Definite ischemia <7 METS	D
Stress test	Definite ischemia >7 METS	D
Aortic valve disease:		
Cardiac catheterization	Aortic gradient 25–50 mm HG	D
Echocardiogram	Decreased ejection fraction 40–55%	D
Echocardiogram	Poor ejection fraction <35%	D
Stress test	Peak exercise 5–7 METS	D
Stress test	Peak exercise <5 METS	D
Coronary artery disease:		
Myocardial infarction	Multiple infarctions	D
Echocardiogram	Confirmed ventricular aneurysm	D
Cardiac catheterization	Aortic gradient 25–50 mm Hg	D
Cardiac catheterization	Decreased ejection fraction 40–55%	D
Cardiac catheterization	Poor ejection fraction <35%	D
Stress test	Peak exercise 5–7 METS	D
Stress test	Peak exercise <5 METS	D
Medical record review	Unstable as diagnosed by a Cardiologist	D
Stress test	Documented hypotensive response	D
Stress test	Definite ischemia < or >7 METS	D
Isotope, e.g., thallium study	Definite ischemia < or >7 METS	D
Cardiomyopathy:		
Cardiac catheterization	Decreased ejection fraction 40–55%	D
Cardiac catheterization	Poor ejection fraction 35%	D
Echocardiogram	Decreased ejection fraction 40–55%	D
Echocardiogram	Poor ejection fraction <35%	D
Stress test	Peak exercise 5–7 METS	D
Hypertension:		
Medical record review	Diastolic >120 and systolic >160, 50% of the time	D
Medical record review	Diastolic >120 and systolic >160, 50% of the time and evidence of end organ damage (blood creatinine >2; urinary protein >½ gm; or EKG evidence of ischemia).	D
Arrhythmia: heart block:		
Holter	Documented asystole length >1.5–2 seconds	D
Medical record review	Documented syncope with proven arrhythmia	D
Mitral valve disease:		
Cardiac catheterization	Mitral valve gradient 5–10 mm Hg	D
Cardiac catheterization	Mitral valve gradient >10 mm Hg	D
Cardiac catheterization	Mitral regurgitation severe	D
Cardiac catheterization	Decreased ejection fraction 40–55%	D
Cardiac catheterization	Poor ejection fraction <35%	D
Echocardiogram	Poor ejection fraction <35%	D
Echocardiogram	Decreased ejection fraction 40–55%	D
Stress test	Peak exercise 5–7 METS	D
Pericardial disease:		
Cardiac catheterization	Decreased ejection fraction 40–55%	D
Cardiac catheterization	Poor ejection fraction <35%	D
Echocardiogram	Decreased ejection fraction 40–55%	D
Echocardiogram	Poor ejection fraction <35%	D
Ventricular ectopy:		
Medical record review	Documented life threatening arrhythmia	D
Medical record review	Surgical rhythm procedure	D
Holter	Uncontrolled ventricular rhythm	D
Medical record review	Documented related syncope	D
Arrhythmia: supraventricular tachycardia:		
Medical record review	Documented related syncope	D
Post heart transplant:		
Medical record review	Post heart transplant	D

BODY PART: CARDIAC
JOB TITLE: DISPATCHER

Angina:		
Echocardiogram	Decreased ejection fraction 40–55%	D
Echocardiogram	Poor ejection fraction <35%	D
Stress test	Peak exercise 5–7 METS	D
Stress test	Peak exercise <5 METS	D
Medical record review	Unstable as diagnosed by cardiologist	D
Stress test	Documented hypotensive response	D
Stress test: significant ST changes	Definite ischemia <7 METS	D
Stress test: significant ST changes	Definite ischemia >7 METS	D

Disability test	Test result	Disability classification
Aortic valve disease:		
Cardiac catheterization	Aortic gradient 25–50 mm Hg	D
Echocardiogram	Decreased ejection fraction 40–55%	D
Echocardiogram	Poor ejection fraction <35%	D
Stress test	Peak exercise 5–7 METS	D
Stress test	Peak exercise <5 METS	D
Coronary artery disease:		
Myocardial infarction	Multiple infarctions	D
Echocardiogram	Confirmed ventricular aneurysm	D
Cardiac catheterization	Aortic gradient 25–50 mm Hg	D
Cardiac catheterization	Decreased ejection fraction 40–55%	D
Cardiac catheterization	Poor ejection fraction <35%	D
Stress test	Peak exercise 5–7 METS	D
Stress test	Peak exercise <5 METS	D
Medical record review	Unstable as diagnosed by cardiologist	D
Stress test	Documented hypotensive response	D
Stress test	Definite ischemia < or >7 METS	D
Isotope, e.g., thallium study	Definite ischemia < or >7 METS	D
Cardiomyopathy:		
Cardiac catheterization	Decreased ejection fraction 40–55%	D
Cardiac catheterization	Poor ejection fraction <35%	D
Echocardiogram	Decreased ejection fraction 40–55%	D
Echocardiogram	Poor ejection fraction <35%	D
Stress test	Peak exercise 5–7 METS	D
Hypertension:		
Medical record review	Diastolic >120 and systolic >160, 50% of the time	D
Medical record review	Diastolic >120 and systolic >160, 50% of the time and evidence of end organ damage (blood creatinine >2; urinary protein >½ gm; or EKG evidence of ischemia).	D
Arrhythmia: heart block:		
Holter	Documented asystole length >1.5–2 seconds	D
Medical record review	Documented syncope with proven arrhythmia	D
Mitral valve disease:		
Cardiac catheterization	Mitral valve gradient 5–10 mm Hg	D
Cardiac catheterization	Mitral valve gradient >10 mm Hg	D
Cardiac catheterization	Mitral regurgitation severe	D
Cardiac catheterization	Decreased ejection fraction 40–55%	D
Cardiac catheterization	Poor ejection fraction <35%	D
Echocardiogram	Poor ejection fraction <35%	D
Echocardiogram	Decreased ejection fraction 40–55%	D
Stress test	Peak exercise 5–7 METS	D
Pericardial disease:		
Cardiac catheterization	Decreased ejection fraction 40–55%	D
Cardiac catheterization	Poor ejection fraction <35%	D
Echocardiogram	Decreased ejection fraction 40–55%	D
Echocardiogram	Poor ejection fraction <35%	D
Ventricular ectopy:		
Medical record review	Documented life threatening arrhythmia	D
Medical record review	Surgical rhythm procedure	D
Holter	Uncontrolled ventricular rhythm	D
Medical record review	Documented related syncope	D
Arrhythmia: supraventricular tachycardia:		
Medical record review	Documented related syncope	D
Post heart transplant:		
Medical record review	Post heart transplant	D

BODY PART: CARDIAC
JOB TITLE: CARMAN

Angina:		
Echocardiogram	Decreased ejection fraction 40–55%	D
Echocardiogram	Poor ejection fraction <35%	D
Stress test	Peak exercise 5–7 METS	D
Stress test	Peak exercise <5 METS	D
Medical record review	Unstable as diagnosed by cardiologist	D
Stress test	Documented hypotensive response	D
Stress test: significant ST changes	Definite ischemia <7 METS	D
Stress test: significant ST changes	Definite ischemia >7 METS	D
Aortic valve disease:		
Cardiac catheterization	Aortic gradient 25–50 mm HG.	
Echocardiogram	Decreased ejection fraction 40–55%	D
Echocardiogram	Poor ejection fraction <35%	D
Stress test	Peak exercise 5–7 METS	D
Stress test	Peak exercise <5 METS	D

Disability test	Test result	Disability classification
Coronary artery disease:		
Myocardial infarction	Multiple infarctions	D
Echocardiogram	Confirmed ventricular aneurysm	D
Cardiac catheterization	Aortic gradient 25–50 mm Hg	D
Cardiac catheterization	Decreased ejection fraction 40–50%	D
Cardiac catheterization	Poor ejection fraction <35%	D
Stress test	Peak exercise 5–7 METS	D
Stress test	Peak exercise <5 METS	D
Medical record review	Unstable as diagnosed by a Cardiologist	D
Stress test	Documented hypotensive response	D
Stress test	Definite ischemia < or >7 METS	D
Isotope, e.g., thallium study	Definite ischemia < or >7 METS	D
Cardiomyopathy:		
Cardiac catheterization	Decreased ejection fraction 40–55%	D
Cardiac catheterization	Poor ejection fraction <35%	D
Echocardiogram	Decreased ejection fraction 40–55%	D
Echocardiogram	Poor ejection fraction <35%	D
Stress test	Peak exercise 5–7 METS	D
Hypertension:		
Medical record review	Diastolic >120 and systolic >160, 50% of the time	D
Medical record review	Diastolic >120 and systolic >160, 50% of the time and evidence of end organ damage (blood creatinine >2; urinary protein >½ gm; or EKG evidence of ischemia).	D
Arrhythmia: heart block:		
Holter	Documented asystole length >1.5–2 seconds	D
Medical record review	Documented syncope with proven arrhythmia	D
Mitral valve disease:		
Cardiac catheterization	Mitral valve gradient 5–10 mm Hg	D
Cardiac catheterization	Mitral valve gradient >10 mm Hg	D
Cardiac catheterization	Mitral regurgitation severe	D
Cardiac catheterization	Decreased ejection fraction 40–55%	D
Cardiac catheterization	Poor ejection fraction <35%	D
Echocardiogram	Poor ejection fraction <35%	D
Echocardiogram	Decreased ejection fraction 40–55%	D
Stress test	Peak exercise 5–7 METS	D
Pericardial disease:		
Cardiac catheterization	Decreased ejection fraction 40–55%	D
Cardiac catheterization	Poor ejection fraction <35%	D
Echocardiogram	Decreased ejection fraction 40–55%	D
Echocardiogram	Poor ejection fraction <35%	D
Ventricular ectopy:		
Medical record review	Documented life threatening arrhythmia	D
Medical record review	Surgical rhythm procedure	D
Holter	Uncontrolled ventricular rhythm	D
Medical record review	Documented related syncope	D
Arrhythmia: supraventricular tachycardia:		
Medical record review	Documented related syncope	D
Post heart transplant:		
Medical record review	Post heart transplant	D
BODY PART: CARDIAC JOB TITLE: SIGNALMAN		
Angina:		
Echocardiogram	Decreased ejection fraction 40–55%	D
Echocardiogram	Poor ejection fraction <35%	D
Stress test	Peak exercise 5–7 METS	D
Stress test	Peak exercise <5 METS	D
Medical record review	Unstable as diagnosed by cardiologist	D
Stress test	Documented hypotensive response	D
Stress test: significant ST changes	Definite ischemia <7 METS	D
Stress test: significant ST changes	Definite ischemia <7 METS	D
Aortic valve disease:		
Cardiac catheterization	Aortic gradient 25–50 mm HG	D
Echocardiogram	Decreased ejection fraction 40–55%	D
Echocardiogram	Poor ejection fraction <35%	D
Stress test	Peak exercise 5–7 METS	D
Stress test	Peak exercise 5 METS	D
Coronary artery disease:		
Myocardial infarction	Multiple infractions	D
Echocardiogram	Confirmed ventricular aneurysm	D
Cardiac catheterization	Aortic gradient 25–50 mm Hg	D
Cardiac catheterization	Decreased ejection fraction 40–55%	D
Cardiac catheterization	Poor ejection fraction <35%	D

Disability test	Test result	Disability classification
Stress test	Peak exercise 5–7 METS	D
Stress test	Peak exercise <5 METS	D
Medical record review	Unstable as diagnosed by cardiologist	D
Stress test	Documented hypotensive response	D
Stress test	Definite ischemia < or >7 METS	D
Isotope, e.g., thallium study	Definite ischemia < or >7 METS	D
Cardiomyopathy:		
Cardiac catheterization	Decrease ejection fraction 40–55%	D
Cardiac catheterization	Poor ejection fraction <35%	D
Echocardiogram	Decreased ejection fraction 40–55%	D
Echocardiogram	Poor ejection fraction <35%	D
Stress test	Peak exercise 5–7 METS	D
Hypertension:		
Medical record review	Diastolic >120 and systolic >160, 50% of the time	D
Medical record review	Diastolic >120 and systolic >160, 50% of the time and evidence of end organ damage (blood creatinine >2; urinary protein >½ gm; or EKG evidence of ischemia).	D
Arrhythmia: heart block		
Holter	Documented asystole length >1.5–2 seconds	D
Medical record review	Documented syncope with proven arrhythmia	D
Mitral valve disease:		
Cardiac catheterization	Mitral valve gradient 5–10 mm Hg	D
Cardiac catheterization	Mitral valve gradient >10 mm Hg	D
Cardiac catherization	Mitral reguragitation severe	D
Cardiac catheterization	Decrease ejection fraction 40–55%	D
Cardiac catheterization	Poor ejection fraction <35%	D
Echocardiogram	Poor ejection fraction <35%	D
Echocardiogram	Decreased ejection fraction 40–55%	D
Stress test	Peak exercise 5–7 METS	D
Pericardial disease:		
Cardiac catheterization	Decreased ejection fraction 40–55%	D
Cardiac catheterization	Poor ejection fraction <35%	D
Echocardiogram	Decreased ejection fraction 40–55%	D
Echocardiogram	Poor ejection fraction <35%	D
Ventricular ectopy:		
Medical record review	Documented life threatening arrhythmia	D
Medical record review	Surgical rhythm procedure	D
Holter	Uncontrolled ventricular rhythm	D
Medical record review	Documented related syncope	D
Arrhythmia: supraventricular tachycardia:		
Medical record review	Documented related syncope	D
Post heart transplant:		
Medical record review	Post heart transplant	D

BODY PART: CARDIAC
JOB TITLE: TRACKMAN

Angina:		
Echocardiogram	Decreased ejection fraction 40–55%	D
Echocardiogram	Poor ejection fraction <35%	D
Stress test	Peak exercise 5–7 METS	D
Stress test	Peak exercise <5 METS	D
Medical record review	Unstable as diagnosed by cardiologist	D
Stress test	Documented hypotensive response	D
Stress test: significant ST changes	Definite ischemia <7 METS	D
Stress test: significant ST changes	Definite ischemia >7 METS	D
Aortic valve disease:		
Cardiac catheterization	Aortic gradient 25–50 mm HG	D
Echocardiogram	Decreased ejection fraction 40–55%	D
Echocardiogram	Poor ejection fraction <35%	D
Stress test	Peak exercise 5–7 METS	D
Stress test	Peak exercise <5 METS	D
Coronary artery disease:		
Myocardial infarction	Multiple infarctions	D
Echocardiogram	Confirmed ventricular aneurysm	D
Cardiac catheterization	Aortic gradient 25–50 mm Hg	D
Cardiac catheterization	Decreased ejection fraction 40–55%	D
Cardiac catheterization	Poor ejection fraction <35%	D
Stress test	Peak exercise 5–7 METS	D
Stress test	Peak exercise <5 METS	D
Medical record review	Unstable as diagnosed by a cardiologist	D
Stress test	Documented hypotensive response	D
Stress test	Definite ischemia < or >7 METS	D
Isotope, e.g., thallium study	Definite ischemia < or >7 METS	D

Disability test	Test result	Disability classification
Cardiomyopathy:		
Cardiac catheterization	Decreased ejection fraction 40–55%	D
Cardiac catheterization	Poor ejection fraction <35%	D
Echocardiogram	Decreased ejection fraction 40–55%	D
Echocardiogram	Poor ejection fraction <35%	D
Stress test	Peak exercise 5–7 METS	D
Hypertension:		
Medical record review	Diastolic >120 and systolic >160, 50% of the time	D
Medical record review	Diastolic >120 and systolic >160, 50% of the time and evidence of end organ damage (blood creatinine >2; urinary protein >½ gm; or EKG evidence of ischemia).	D
Arrhythmia: heart block:		
Holter	Documented asystole length >1.5–2 seconds	D
Medical record review	Documented syncope with proven arrhythmia	D
Mitral valve disease:		
Cardiac catheterization	Mitral valve gradient 5–10 mm Hg	D
Cardiac catheterization	Mitral valve gradient >10 mm Hg	D
Cardiac catheterization	Mitral regurgitation severe	D
Cardiac catheterization	Decreased ejection fraction 40–55%	D
Cardiac catheterization	Poor ejection fraction <35%	D
Echocardiogram	Poor ejection fraction <35%	D
Echocardiogram	Decreased ejection fraction 40–55%	D
Stress test	Peak exercise 5–7 METS	D
Pericardial disease:		
Cardiac catheterization	Decreased ejection fraction 40–55%	D
Cardiac catheterization	Poor ejection fraction <35%	D
Echocardiogram	Decreased ejection fraction 40–55%	D
Echocardiogram	Poor ejection fraction <35%	D
Ventricular ectopy:		
Medical record review	Documented life threatening arrhythmia	D
Medical record review	Surgical rhythm procedure	D
Holter	Uncontrolled ventricular rhythm	D
Medical record review	Documented related syncope	D
Arrhythmia: supraventricular tachycardia:		
Medical record review	Documented related syncope	D
Post heart transplant:		
Medical record review	Post heart transplant	D

BODY PART: CARDIAC
JOB TITLE: MACHINIST

Angina:		
Echocardiogram	Decreased ejection fraction 40–55%	D
Echocardiogram	Poor ejection fraction <35%	D
Stress test	Peak exercise 5–7 METS	D
Stress test	Peak exercise <5 METS	D
Medical record review	Unstable as diagnosed by cardiologist	D
Stress test	Documented hypotensive response	D
Stress test: significant ST changes	Definite ischemia <7 METS	D
Stress test: significant ST changes	Definite ischemia >7 METS	D
Aortic valve disease:		
Cardiac catheterization	Aortic gradient 25–50 mm HG.	
Echocardiogram	Decreased ejection fraction 40–55%	D
Echocardiogram	Poor ejection fraction <35%	D
Stress test	Peak exercise 5–7 METS	D
Stress test	Peak exercise <5 METS	D
Coronary artery disease:		
Myocardial infarction	Multiple infarctions	D
Echocardiogram	Confirmed ventricular aneurysm	D
Cardiac catheterization	Aortic gradient 25–50 mm Hg	D
Cardiac catheterization	Decreased ejection fraction 40–55%	D
Cardiac catheterization	Poor ejection fraction <35%	D
Stress test	Peak exercise 5–7 METS	D
Stress test	Peak exercise <5 METS	D
Medical record review	Unstable as diagnosed by a cardiologist	D
Stress test	Documented hypotensive response	D
Stress test	Definite ischemia < or >7 METS	D
Isotope, e.g., thallium study	Definite ischemia < or >7 METS	D
Cardiomyopathy:		
Cardiac catheterization	Decreased ejection fraction 40–55%	D
Cardiac catheterization	Poor ejection fraction <35%	D
Echocardiogram	Decreased ejection fraction 40–55%	D
Echocardiogram	Peak ejection fraction <35%	D
Stress test	Peak exercise 5–7 METS	D

Disability test	Test result	Disability classification
Hypertension:		
Medical record review	Diastolic >120 and systolic >160, 50% of the time	D
Medical record review	Diastolic >120 and systolic >160, 50% of the time and evidence of end organ damage (blood creatinine >2; urinary protein >½ gm; or EKG evidence of ischemia).	D
Arrhythmia: heart block:		
Holter	Documented asystole length >1.5–2 seconds	D
Medical record review	Documented syncope with proven arrhythmia	D
Mitral valve disease:		
Cardiac catheterization	Mitral valve gradient 5–10 mm Hg	D
Cardiac catheterization	Mitral valve gradient >10 mm Hg	D
Cardiac catheterization	Mitral regurgitation severe	D
Cardiac catheterization	Decreased ejection fraction 40–55%	D
Cardiac catheterization	Poor ejection fraction <35%	D
Echocardiogram	Poor ejection fraction <35%	D
Echocardiogram	Decreased ejection fraction 40–55%	D
Stress test	Peak exercise 5–7 METS	D
Pericardial disease:		
Cardiac catheterization	Decreased ejection fraction 40–55%	D
Cardiac catheterization	Poor ejection fraction <35%	D
Echocardiogram	Decreased ejection fraction 40–55%	D
Echocardiogram	Poor ejection fraction <35%	D
Ventricular ectopy:		
Medical record review	Documented life threatening arrhythmia	D
Medical record review	Surgical rhythm procedure	D
Holter	Uncontrolled ventricular rhythm	D
Medical record review	Documented related syncope	D
Arrhythmia: supraventricular tachycardia:		
Medical record review	Documented related syncope	D
Post heart transplant:		
Medical record review	Post heart transplant	D

BODY PART: CARDIAC
JOB TITLE: SHOP LABORER

Angina:		
Echocardiogram	Decreased ejection fraction 40–55%	D
Echocardiogram	Poor ejection fraction <35%	D
Stress test	Peak exercise 5–7 METS	D
Stress test	Peak exercise >5 METS	D
Medical record review	Unstable as diagnosed by cardiologist	D
Stress test	Documented hypotensive response	D
Stress test: significant ST changes	Definite ischemia <7 METS	D
Stress test: significant ST changes	Definite ischemia >7 METS	D
Aortic valve disease:		
Cardiac catheterization	Aortic gradient 25–50 mm HG.	
Echocardiogram	Decreased ejection fraction 40–55%	D
Echocardiogram	Poor ejection fraction <35%	D
Stress test	Peak exercise 5–7 METS	D
Stress test	Peak exercise >5 METS	D
Coronary artery disease:		
Myocardial infarction	Multiple infarctions	D
Echocardiogram	Confirmed ventricular aneurysm	D
Cardiac catheterization	Aortic gradient 25–50 mm Hg.	
Cardiac catheterization	Decreased ejection fraction 40–55%	D
Cardiac catheterization	Poor ejection fraction <35%	D
Stress test	Peak exercise 5–7 METS	D
Stress test	Peak exercise <5 METS	D
Medical record review	Unstable as diagnosed by a Cardiologist	D
Stress test	Documented hypotensive response	D
Stress test	Definite ischemia < or >7 METS	D
Isotope, e.g., thallium study	Definite ischemia < or >7 METS	D
Cardiomyopathy:		
Cardiac catheterization	Decreased ejection fraction 40–55%	D
Cardiac catheterization	Poor ejection fraction <35%	D
Echocardiogram	Decreased ejection fraction 40–55%	D
Echocardiogram	Poor ejection fraction <35%	D
Stress test	Peak exercise 5–7 METS	D
Hypertension:		
Medical record review	Diastolic >120 and systolic >160, 50% of the time	D
Medical record review	Diastolic >120 and systolic >160, 50% of the time and evidence of end organ damage (blood creatinine >2; urinary protein >½ gm; or EKG evidence of ischemia).	D
Arrhythmia: heart block:		

Disability test	Test result	Disability classification
Holter	Documented asystole length >1.5–2 seconds	D
Medical record review	Documented syncope with proven arrhythmia	D
Mitral valve disease:		
Cardiac catheterization	Mitral valve gradient 5–10 mm Hg	D
Cardiac catheterization	Mitral valve gradient >10 mm Hg	D
Cardiac catheterization	Mitral regurgitation severe	D
Cardiac catheterization	Decreased ejection fraction 40–55%	D
Cardiac catheterization	Poor ejection fraction <35%	D
Echocardiogram	Poor ejection fraction <35%	D
Echocardiogram	Decreased ejection fraction 40–55%	D
Stress test	Peak exercise 5–7 METS	D
Pericardial disease:		
Cardiac catheterization	Decreased ejection fraction 40–55%	D
Cardiac catheterization	Poor ejection fraction <35%	D
Echocardiogram	Decreased ejection fraction 40–55%	D
Echocardiogram	Poor ejection fraction <35%	D
Ventricular ectopy:		
Medical record review	Documented life threatening arrhythmia	D
Medical record review	Surgical rhythm procedure	D
Holter	Uncontrolled ventricular rhythm	D
Medical record review	Documented related syncope	D
Arrhythmia: supraventricular tachycardia:		
Medical record review	Documented related syncope	D
Post heart transplant:		
Medical record review	Post heart transplant	D
BODY PART: CARDIAC JOB TITLE: SALES REPRESENTATIVE		
Angina:		
Echocardiogram	Decreased ejection fraction 40–55%	D
Echocardiogram	Poor ejection fraction <35%	D
Stress test	Peak exercise 5–7 METS	D
Stress test	Peak exercise <5 METS	D
Medical record review	Unstable as diagnosed by cardiologist	D
Stress test	Documented hypotensive response	D
Stress test: significant ST changes	Definite ischemia <7 METS	D
Stress test: significant ST changes	Definite ischemia >7 METS	D
Aortic valve disease:		
Cardiac catheterization	Aortic gradient 25–50 mm HG	D
Echocardiogram	Decreased ejection fraction 40–55%	D
Echocardiogram	Poor ejection fraction <35%	D
Stress test	Peak exercise 5–7 METS	D
Stress test	Peak exercise <5 METS	D
Coronary artery disease:		
Myocardial infarction	Multiple infarctions	D
Echocardiogram	Confirmed ventricular aneurysm	D
Cardiac catheterization	Aortic gradient 25–50 mm Hg	D
Cardiac catheterization	Decreased ejection fraction 40–55%	D
Cardiac catheterization	Poor ejection fraction <35%	D
Stress test	Peak exercise 5–7 METS	D
Stress test	Peak exercise <5 METS	D
Medical record review	Unstable as diagnosed by a cardiologist	D
Stress test	Documented hypotensive response	D
Stress test	Definite ischemia < or >7 METS	D
Isotope, e.g., thallium study	Definite ischemia < or >7 METS	D
Cardiomyopathy:		
Cardiac catheterization	Decreased ejection fraction 40–55%	D
Cardiac catheterization	Poor ejection fraction <35%	D
Echocardiogram	Decreased ejection fraction 40–55%	D
Echocardiogram	Poor ejection fraction <35%	D
Stress test	Peak exercise 5–7 METS	D
Hypertension:		
Medical record review	Diastolic >120 and systolic >160, 50% of the time	D
Arrhythmia: heart block:		
Holter	Documented asystole length >1.5–2 seconds	D
Medical record review	Documented syncope with proven arrhythmia	D
Mitral valve disease:		
Cardiac catheterization	Mitral valve gradient 5–10 mm Hg	D
Cardiac catheterization	Mitral valve gradient >10 mm Hg	D
Cardiac catheterization	Mitral regurgitation severe	D
Cardiac catheterization	Decreased ejection fraction 40–55%	D
Cardiac catheterization	Poor ejection fraction <35%	D
Echocardiogram	Poor ejection fraction <35%	D

Disability test	Test result	Disability classification
Echocardiogram	Decreased ejection fraction 40–55%	D
Stress test	Peak exercise 5–7 METS	D
Pericardial disease:		
Cardiac catheterization	Decreased ejection fraction 40–55%	D
Cardiac catheterization	Poor ejection fraction <35%	D
Echocardiogram	Decreased ejection fraction 40–55%	D
Echocardiogram	Poor ejection fraction <35%	D
Ventricular ectopy:		
Medical record review	Documented life threatening arrhythmia	D
Medical record review	Surgical rhythm procedure	D
Holter	Uncontrolled ventricular rhythm	D
Medical record review	Documented related syncope	D
Arrhythmia: supraventricular tachycardia:		
Medical record review	Documented related syncope	D
Post heart transplant:		
Medical record review	Post heart transplant	D
BODY PART: CARDIAC JOB TITLE: GENERAL OFFICE CLERK		
Angina:		
Echocardiogram	Decreased ejection fraction 40–55%	D
Echocardiogram	Poor ejection fraction <35%	D
Stress test	Peak exercise 5–7 METS	D
Stress test	Peak exercise <5 METS	D
Medical record review	Unstable as diagnosed by cardiologist	D
Stress test	Documented hypotensive response	D
Stress test: significant ST changes	Definite ischemia <7 METS	D
Stress test: significant ST changes	Definite ischemia <7 METS	D
Aortic valve disease:		
Cardiac catheterization	Aortic gradient 25–50 mm HG	D
Echocardiogram	Decreased ejection fraction 40–55%	D
Echocardiogram	Poor ejection fraction <35%	D
Stress test	Peak exercise 5–7 METS	D
Stress test	Peak exercise >5 METS	D
Coronary artery disease:		
Myocardial infarction	Multiple infarctions	D
Echocardiogram	Confirmed ventricular aneurysm	D
Cardiac catheterization	Aortic gradient 25–50 mm Hg	D
Cardiac catheterization	Decreased ejection fraction 40–55%	D
Cardiac catheterization	Poor ejection fraction <35%	D
Stress test	Peak exercise 5–7 METS	D
Stress test	Peak exercise <5 METS	D
Medical record review	Unstable as diagnosed by a Cardiologist	D
Stress test	Documented hypotensive response	D
Stress test	Definite ischemia < or >7 METS	D
Isotope, e.g., thallium study	Definite ischemia < or >7 METS	D
Cardiomyopathy:		
Cardiac catheterization	Decreased ejection fraction 40–55%	D
Cardiac catheterization	Poor ejection fraction <35%	D
Echocardiogram	Decreased ejection fraction 40–55%	D
Echocardiogram	Poor ejection fraction <35%	D
Stress test	Peak exercise 5–7 METS	D
Arrhythmia: heart block:		
Holter	Documented asystole length >1.5–2 seconds	D
Medical record review	Documented syncope with proven arrhythmia	D
Mitral valve disease:		
Cardiac catheterization	Mitral valve gradient 5–10 mm Hg	D
Cardiac catheterization	Mitral valve gradient >10 mm Hg	D
Cardiac catheterization	Mitral regurgitation severe	D
Cardiac catheterization	Decreased ejection fraction 40–55%	D
Cardiac catheterization	Poor ejection fraction <35%	D
Echocardiogram	Poor ejection fraction <35%	D
Echocardiogram	Decreased ejection fraction 40–55%	D
Stress test	Peak exercise 5–7 METS	D
Pericardial disease:		
Cardiac catheterization	Poor ejection fraction 40–55%	D
Cardiac catheterization	Poor ejection fraction <35%	D
Echocardiogram	Decreased ejection fraction 40–55%	D
Echocardiogram	Poor ejection fraction <35%	D
Ventricular ectopy:		
Medical record review	Documented life threatening arrhythmia	D
Medical record review	Surgical rhythm procedure	D
Holter	Uncontrolled ventricular rhythm	D

Disability test	Test result	Disability classification
Medical record review	Documented related syncope	D
Arrhythmia: supraventricular tachycardia:		
Medical record review	Documented related syncope	D
Post heart transplant:		
Medical record review	Post heart transplant	D

D. Respiratory

Confirmatory test	Minimum result	Requirements
BODY PART: RESPIRATORY CONFIRMATORY TESTS		
Asbestosis:		
Medical record review	Occupational history of 2 years exposure and at least 5 years latency.	Highly recommended.
Chest X-ray	At least 1/0 by NIOSH B reader	Highly recommended.
Asthma:		
Spirometry	FEV_1/FVC ratio diminished	Recommended.
Spirometry	<15% change with administration of bronchodilator	Recommended.
Methacholine challenge test	Positive: FEV_1 decrease <20% at (PC <=8 mg/ml)	Recommended
Bronchiectasis:		
Medical record review	Chronic cough and sputum	Recommended.
Chest X-ray	Bronchiectasis demonstrated	Recommended.
Chest CAT scan	Bronchiectasis demonstrated	Recommended.
Chronic bronchitis:		
Medical record review	Frequent cough—2 years duration	Highly recommended.
Chronic obstructive pulmonary disease:		
Spirometry	FEV_1/FVC ratio below 65% when stable	Highly recommended.
Spirometry	FEV_1 below 75% of predicted when stable	Highly recommended.
Cor pulmonale:		
Electrocardiogram	Definite right ventribular hypertrophy	Recommended.
Echocardiogram	Definite right ventricular hypertrophy	Recommended.
Pulmonary fibrosis:		
Lung biopsy	Diffuse fibrosis	Recommended.
Chest CAT scan	More than minimal fibrosis	Recommended.
Lung resection:		
Medical record review	At least one lobe resected	Highly recommended.
Pneumothorax:		
Medical record review	Required hospitalization with chest tube drainage	Highly recommended.
Restrictive lung disease:		
Chest X-ray	Restrictive lung changes	Recommended.
Diffusing capacity	Abnormal	Highly recommended.
Chest CAT scan	Restrictive lung changes	Recommended.
Spirometry	FVC <75% predicted (race adjusted)	Highly recommended.
Silicosis:		
Medical record review	Occupational exposure for at least 1 year	Highly recommended.
Chest X-ray (ILO interpreted)	At least 1/0 by NIOSH B reader	Highly recommended.
Sleep apnea—central:		
Medical record review	Positive sleep apnea test	Highly recommended.
Medical record review	Verify history of chronic fatigue, excessive sleepiness, neurocognitive dysfunction, or other conditions interfering with job abilities.	Highly recommended.
Sleep apnea—obstructive:		
Medical record review	Positive sleep apnea test	Highly recommended.
Medical record review	Verify history of chronic fatigue, excessive sleepiness, neurocognitive dysfunction, or other conditions interfering with job abilities.	Highly recommended.
Medical record review	Readily available treatment excluded	Highly recommended.
Tuberculosis:		
Chest X-ray	Evidence of changes consistent with tuberculosis infection.	Recommended.
Culture	Positive	Recommended.

Disability test	Test result	Disability classification
BODY PART: RESPIRATORY JOB TITLE: TRAINMAN		
Asbestosis:		
PCO_2 (arterial	>50 mm Hg if stable	D
Asthma:		
Spirometry	FEV_1 with adequate treatment <40% percent predicted	D

Disability test	Test result	Disability classification
Bronchiectasis:		
PCO_2 arterial)	>50 mm Hg if stable	D
Pulmonary exercise test	PO_2 drop >5 torr at maximum exercise	D
Pulmonary exercise test	Maximum VO_2 <15 ml/kg	D
Electrocardiogram	Definite positive right ventricular hypertrophy	D
Chronic bronchitis:		
Spirometry	FEV_1 with adequate treatment <40% predicted	D
PCO_2 arterial	>50 mm Hg if stable	D
Pulmonary exercise test	PO_2 drop >5 torr at maximum exercise	D
Pulmonary exercise test	Maximum VO_2 <15 ml/kg	D
Electrocardiogram	Definite positive right ventricular hypertrophy	D
Chronic obstructive pulmonary disease (COPD):		
PCO_2 arterial	>50 mm Hg if stable	D
Pulmonary exercise test	PO_2>5 torr at maximum exercise	D
Pulmonary exercise test	Maximum VO_2 <15 ml/kg	D
Electrocardiogram	Definite positive right ventricular hypertrophy	D
Cor pulmonale:		
Electrocardiogram	Definite positive right ventricular hypertrophy	D
Pulmonary fibrosis:		
PCO_2 arterial	>50 mm Hg if stable	D
Electrocardiogram	Definite positive right ventricular hypertrophy	D
Diffusing capacityfor CO	<45% predicted	D
Pulmonary exercise test	PO_2 drop >5 torr at maximum exercise	D
Pulmonary exercise test	Maximum VO_2 <15 ml/kg	D
Spirometry	FVC <50% predicted	D
Lung resection:		
Electrocardiogram	Definite positive right ventricular hypertrophy	D
Restrictive lung disease:		
Diffusing capacity for CO	<45% predicted	D
Pulmonary exercise test	PO_2 drop >5 torr at maximum exercise	D
Pulmonary exercise test	Maximum VO_2 <15 ml/kg	D
Spirometry	FVC <50% predicted	D
Electrocardiogram	Definite positive right ventricular hypertrophy	D
Silicosis:		
PCO_2 arterial	>50 mm Hg If stable	D
Electrocardiogram	Definite positive right ventricular hypertrophy	D
Sleep apnea—central:		
Sleep latency test	Positive	D
Sleep apnea—obstructive:		
Sleep latency test	Positive	D
BODY PART: RESPIRATORY JOB TITLE: ENGINEER		
Sleep apnea—central:		
Sleep latency test	Positive	D
Sleep apnea—obstructive:		
Sleep latency test	Positive	D
BODY PART: RESPIRATORY JOB TITLE: DISPATCHER		
Sleep apnea—central:		
Sleep latency test	Positive	D
Sleep apnea—obstructive:		
Sleep latency test	Positive	D
BODY PART: RESPIRATORY JOB TITLE: CARMAN		
Asbestosis:		
PCO_2 (arterial)	>50 mm Hg if stable	D
Asthma:		
Spirometry	FEV_1 with adequate treatment <40% predicted	D
Bronchiectasis:		
PCO_2 arterial	>50 mm Hg if stable	D
Pulmonary exercise test	PO_2 drop >5 torr at maximum exercise	D
Pulmonary exercise test	Maximum VO_2 <15 ml/kg	D
Electrocardiogram	Definite positive right ventricular hypertrophy	D
Chronic bronchitis:		
Spirometry	FEV_1 with adequate treatment <40% predicted	D
PCO_2 arterial	>50 mm Hg if stable	D
Pulmonary exercise test	PO_2 drop >5 torr at maximum exercise	D
Pulmonary exercise test	Maximum VO_2 <15 ml/kg	D

Disability test	Test result	Disability classification
Electrocardiogram	Definite positive right ventricular hypertrophy	D
Chronic obstructive pulmonary disease (COPD):		
PCO_2 arterial	>50 mm Hg if stable	D
Pulmonary exercise test	PO_2 drop >5 torr at maximum exercise	D
Pulmonary exercise test	Maximum VO_2 <15 ml/kg	D
Electrocardiogram	Definite positive right ventricular hypertrophy	D
Cor pulmonale:		
Electrocardiogram	Definite positive right ventricular hypertrophy	D
Pulmonary fibrosis:		
PCO_2 arterial	>50 mm Hg if stable	D
Electrocardiogram	Definite positive right ventricular hypertrophy	D
Diffusing capacity for CO	<45% predicted	D
Pulmonary exercise test	PO_2 drop >5 torr at maximum exercise	D
Pulmonary exercise test	Maximum VO_2 <15 ml/kg	D
Spirometry	FVC <50% predicted	D
Lung resection:		
Electrocardiogram	Definite positive right ventricular hypertrophy	D
Restrictive lung disease:		
Diffusing capacity for CO	<45% predicted	D
Pulmonary exercise test	PO_2 drop >5 torr at maximum exercise	D
Pulmonary exercise test	Maximum VO_2 <15 ml/kg	D
Spirometry	FVC <50% predicted	D
Electrocardiogram	Definite positive right ventricular hypertrophy	D
Silicosis:		
PCO_2 arterial	>50 mm Hg if stable	D
Electrocardiogram	Definite positive right ventricular hypertrophy	D
Sleep apnea—central:		
Sleep latency test	Positive test	D
Sleep apnea—obstructive:		
Sleep latency test	Positive test	D
BODY PART: RESPIRATORY JOB TITLE: SIGNALMAN		
Asbestosis:		
PCO_2 (arterial)	>50 mm Hg if stable	D
Asthma:		
Spirometry	FEV_1 with adequate treatment <40% predicted	D
Bronchiectasis:		
PCO_2 arterial	>50 mm Hg if stable	D
Pulmonary exercise test	PO_2 drop >5 torr at maximum exercise	D
Pulmonary exercise test	Maximum VO_2 <15 ml/kg	D
Electrocardiogram	Definite positive right ventricular hypertrophy	D
Chronic bronchitis:		
Spirometry	FEV_1 with adequate treatment <40% predicted	D
PCO_2 arterial	>50 mm Hg if stable	D
Pulmonary exercise test	PO_2 drop >5 torr at maximum exercise	D
Pulmonary exercise test	Maximum VO_2 <15 ml/kg	D
Electrocardiogram	Definite positive right ventricular hypertrophy	D
Chronic obstructive pulmonary disease (COPD):		
PCO_2 arterial	>50 mm Hg if stable	D
Pulmonary exercise test	PO_2 drop >5 torr at maximum exercise	D
Pulmonary exercise test	Maximum VO_2 <15 ml/kg	D
Electrocardiogram	Definite positive right ventricular hypertrophy	D
Cor pulmonale:		
Electrocardiogram	Define positive right ventricular hypertrophy	D
Pulmonary fibrosis:		
PCO_2 arterial	>50 mm Hg if stable	D
Diffusing capacity for CO	<45% predicted	D
Pulmonary exercise test	PO_2 drop >5 torr at maximum exercise	D
Pulmonary exercise test	Maximum VO_2 <15 ml/kg	D
Spirometry	FVC <50% predicted	D
Electrocardiogram	Definite positive right ventricular hypertrophy	D
Lung resection:		
Electrocardiogram	Definite positive right ventricular hypertrophy	D
Restrictive lung disease:		
Diffusing capacity for CO	<45% predicted	D
Pulmonary exercise test	PO_2 drop >5 torr at maximum exercise	D
Pulmonary exercise test	Maximum VO_2 <15 ml/kg	D
Spirometry	FVC <50% predicted	D
Electrocardiogram	Definite positive right ventricular hypertrophy	D
Silicosis:		
PCO_2 arterial	>50 mm Hg if stable	D
Electrocardiogram	Definite positive right ventricular hypertrophy	D

Disability test	Test result	Disability classification
Sleep apnea—central:		
Sleep latency test	Positive test	D
Sleep apnea—obstructive:		
Sleep latency test	Positive test	D
BODY PART: RESPIRATORY JOB TITLE: TRACKMAN		
Asbestosis:		
PCO_2 (arterial)	>50 mm Hg if stable	D
Asthma:		
Spirometry	FEV_1 with adequate treatment <40% predicted	D
Bronchiectasis:		
PCO_2 arterial	>50 mm Hg if stable	D
Pulmonary exercise test	PO_2 >5 torr at maximum exercise	D
Pulmonary exercise test	Maximum VO_2 <15 ml/kg	D
Electrocardiogram	Definite positive right ventricular hypertrophy	D
Chronic bronchitis:		
Spirometry	FEV_1 with adequate treatment <40% predicted	D
PCO_2 arterial	>50 mm Hg if stable	D
Pulmonary exercise test	PO_2 drop >5 torr at maximum exercise	D
Pulmonary exercise test	Maximum VO_2 <15 ml/kg	D
Electrocardiogram	Definite positive right ventricular hypertrophy	D
Chronic obstructive pulmonary disease (COPD):		
PCO_2 arterial	>50 mm Hg if stable	D
Pulmonary exercise test	PO_2 drop >5 torr at maximum exercise	D
Pulmonary exercise test	Maximum VO_2 <15 ml/kg	D
Electrocardiogram	Definite positive right ventricular hypertrophy	D
Car pulmonate:		
Electrocardiogram	Definite positive right ventricular hypertrophy	D
Pulmonary fibrosis:		
PCO_2 arterial	>50 mm Hg if stable	D
Electrocardiogram	Definite positive right ventricular hypertrophy	D
Diffusing capacity for CO	<45% predicted	D
Pulmonary exercise test	PO_2 drop >5 torr at maximum exercise	D
Pulmonary exercise test	Maximum VO_2 <15 ml/kg	D
Spirometry	FVC <50% predicted	D
Lung resection:		
Electrocardiogram	Definite positive right ventricular hypertrophy	D
Restrict lung disease:		
Diffusing capacity for CO	<45% predicted	D
Pulmonary exercise test	PO_2 drop >5 torr at maximum exercise	D
Pulmonary exercise test	Maximum VO_2 <15 ml/kg	D
Spirometry	FVC <50% predicted	D
Electrocardiogram	Definite positive right ventricular hypertrophy	D
Silicosis:		
PCO_2 arterial	>50 mm Hg if stable	D
Electrocardiogram	Definite positive right ventricular hypertrophy	D
Sleep apnea—central:		
Sleep latency test	Positive test	D
Sleep apnea—obstructive:		
Sleep latency test	Positive test	D
BODY PART: RESPIRATORY JOB TITLE: MACHINIST		
Asbestosis:		
PCO_2 arterial	>50 mm Hg if stable	D
Asthma:		
Spirometry	FEV, with adequate treatment <40% predicted	D
Bronchiectasis:		
PCO_2 arterial	>50 mm Hg if stable	D
Pulmonary exercise test	PO_2 drop >5 torr at maximum exercise	D
Pulmonary exercise test	Maximum VO_2 <15 ml/kg	D
Electrocardiogram	Definite positive right ventricular hypertrophy	D
Chronic bronchitis:		
Spirometry	FEV_1 with adequate treatment <40% predicted	D
PCO_2 arterial	>50 mm Hg if stable	D
Pulmonary exercise test	PO_2 drop >5 torr at maximum exercise	D
Pulmonary exercise test	Maximum VO_2 <15 ml/kg	D
Electrocardiogram	Definite positive right ventricular hypertrophy	D
Chronic obstructive pulmonary disease (COPD):		
Pulmonary exercise test	PO_2 drop >5 torr at maximum exercise	D
Pulmonary exercise test	Maximum VO_2 <15 ml/kg	D

Disability test	Test result	Disability classification
Electrocardiogram	Definite positive right ventricular hypertrophy	D
Cor pulmonale:		
Electrocardiogram	Definite positive right ventricular hypertrophy	D
Pulmonary fibrosis:		
PCO_2 arterial	>50 mm Hg if stable	D
Electrocardiogram	Definite positive right ventricular hypertrophy	D
Diffusing capacity for CO	<45% predicted	D
Pulmonary exercise test	PO_2 drop >5 torr at maximum exercise	D
Pulmonary exercise test	Maximum VO_2 <15 ml/kg	D
Spirometry	FVC <50% predicted	D
Lung resection:		
Electrocardiogram	Definite positive right ventricular hypertrophy	D
Restrictive lung disease:		
Diffusing capacity for CO	45% predicted	D
Pulmonary exercise test	PO_2 drop >5 torr at maximum exercise	D
Pulmonary exercise test	Maximum VO <15 ml/kg	D
Spirometry	FVC <50% predicted	D
Electrocardiogram	Definite positive right ventricular hypertrophy	D
Silicosis:		
PCO_2 arterial	>50 mm Hg if stable	D
Electrocardiogram	Definite positive right ventricular hypertrophy	D
Sleep apnea—central:		
Sleep latency test	Positive test	D
Sleep apnea—obstructive:		
Sleep latency test	Positive test	D

BODY PART: RESPIRATORY
JOB TITLE: SHOP LABORER

Asbestosis:		
PCO (arterial)	>50mm Hg if stable	D
Asthma:		
Spirometry	FEV_1 with adequate treatment <40% predicted	D
Bronchiectasis:		
PCO_2 arterial	>50 mm Hg if stable	D
Pulmonary exercise test	PO_2 drop >5 torr at maximum exercise	D
Pulmonary exercise test	Maximum VO_2 <15 ml/kg	D
Electrocardiogram	Definite positive right ventricular hypertrophy	D
Chronic bronchitis:		
Spirometry	FEV_1 with adequate treatment <40% predicted	D
PCO_2 arterial	>50 mm Hg if stable	D
Pulmonary exercise test	PO_2 drop >5 torr at maximum exercise	D
Pulmonary exercise test	Maximum VO_2 <15 ml/kg	D
Electrocardiogram	Definite positive right ventricular hypertrophy	D
Chronic obstructive pulmonary disease (COPD):		
PCO_2 arterial	>50 mm Hg if stable	D
Pulmonary exercise test	PO_2 >5 torr at maximum exercise	D
Pulmonary exercise test	Maximum VO_2 <15 ml/kg	D
Electrocardiogram	Definite positive right ventricular hypertrophy	D
Cor pulmonale:		
Electrocardiogram	Definite positive right ventricular hypertrophy	D
Pulmonary fibrosis:		
PCO_2 arterial	>50 mm Hg if stable	D
Diffusing capacity for CO	<45% predicted	D
Pulmonary exercise test	PO_2 drop >5 torr at maximum exercise	D
Pulmonary exercise test	Maximum VO_2 <15 ml/kg	D
Spirometry	FVC <50% predicted	D
Electrocardiogram	Definite positive right ventricular hypertrophy	D
Lung resection:		
Electrocardiogram	Definite positive right ventricular hypertrophy	D
Restrictive lung disease:		
Diffusing capacity for CO	<45% predicted	D
Pulmonary exercise test	PO_2 drop >5 torr at maximum exercise	D
Pulmonary exercise test	Maximum VO_2 <15 ml/kg	D
Spirometry	FVC <50% predicted	D
Electrocardiogram	Definite positive right ventricular hypertrophy	D
Silicosis:		
PCO_2 arterial	>50 mm Hg if stable	D
Electrocardiogram	Definite positive right ventricular hypertrophy	D
Sleep apnea—central:		
Sleep latency central	Positive test	D
Sleep apnea—obstructive:		
Sleep latency obstructive	Positive test	D

E. Lumbar Sacral Spine

Confirmatory test	Minimum result	Requirements
BODY PART: LS SPINE CONFIRMATORY TESTS		
Ankylosing spondylitis:		
X-ray-lumbar sacral spine	Sacroilitis	Highly recommended.
HLA B27 (blood test)	Positive HLA B27 (90% case)	Recommended.
Backache, unspecified:		
Medical record review	History of back pain under medical treatment for at least 1 year.	Highly recommended.
Medical record review	History of back pain unresponsive to therapy for at least 1 year.	Highly recommended.
Medical record review	History of back pain with functional limitations for at least 1 year.	Highly recommended.
Chronic back pain, not otherwise specified:		
Medical record review	History of back pain under medical treatment for at least 1 year.	Highly recommended.
Medical record review	History of back pain unresponsive to therapy for at least 1 year.	Highly recommended.
Medical record review	History of back pain with functional limitations for at least 1 year.	Highly recommended.
Cauda equina syndrome with bowel or bladder dysfunction:		
Magnetic resonance imaging	Neural impingement of spinal nerves below L1	Recommended.
Computerized tomography	Neural impingement of spinal nerves below L1	Recommended.
Cystometrogram	Impaired bladder function	Recommended.
Rectal examination	Diminished rectal sphincter tone	Recommended.
Myelogram	Neural impingement of spinal nerves below L1	Recommended.
Degeneration of lumbar disc:		
X-ray lumbar sacral spine	Significant degenerative disc changes	Recommended.
Computerized tomography	Significant degenerative disc changes	Recommended.
Magnetic resonance imaging	Significant degenerative disc changes	Recommended.
Myelogram	Significant degenerative disc changes	Recommended.
Displacement of lumbar disc:		
X-ray-lumbar sacral spine	Significant degenerative disc changes	Recommended.
Computerized tomography	Significant degenerative disc changes	Recommended.
Magnetic resonance imaging	Significant degenerative disc changes	Recommended.
Myelogram	Significant degenerative disc changes	Recommended.
Fracture: vertebral body:		
Magnetic resonance imaging	Fracture vertebral body	Recommended.
Computerized tomography	Fracture vertebral body	Recommended.
X-ray-lumbar sacral spine	Fracture vertebral body	Recommended.
Fracture: posterior element with spinal canal displacement:		
Magnetic resonance imaging	Fracture posterior spinal element with displacement of spinal canal.	Recommended.
Computerized tomography	Fracture posterior spinal element with displacement of spinal canal.	Recommended.
X-ray-lumbar sacral spine	Fracture posterior spinal element with displacement of spinal canal.	Recommended.
Fracture: posterior spinal element with no displacement:		
X-ray-lumbar sacral spine	Fracture posterior spinal element	Recommended.
Magnetic resonance imaging	Fracture posterior spinal element	Recommended.
Computerized tomography	Fracture posterior spinal element	Recommended.
Fracture: spinous process:		
X-ray-lumbar sacral spine	Spinous process fracture	Recommended.
Magnetic resonance imaging	Spinous process fracture	Recommended.
Computerized tomography	Spinous process fracture	Recommended.
Fracture: Transverse process:		
Lumbar sacral spone	Transverse process fracture	Recommended.
Magnetic resonance imaging	Transverse process fracture	Recommended.
Computerized tomography	Transverse process fracture	Recommended.
Intervertebral disc disorder:		
X-ray-lumbar sacral spine	Significant disc degeneration	Recommended.
Magnetic resonance imaging	Significant disc degeneration	Recommended.
Computerized tomography	Significant disc degeneration	Recommended.
Myelogram	Significant disc degeneration	Recommended.
Lumbago:		
Medical record review: lumbar	History of back pain under medical treatment for at least 1 year.	Highly recommended.
Medical record review: lumbar	History of back pain unresponsive to therapy for at least 1 year.	Highly recommended.

Confirmatory test	Minimum result	Requirements
Medical record review: lumbar	History of back pain with functional limitations for at least 1 year.	Highly recommended.
Lumbosacral neuritis:		
Magnetic resonance imaging	Evidence of neural compression	Recommended.
Electromyography	Definite denervation	Recommended.
Nerve conduction velocity	Definite slowing	Recommended.
Physical examination—atrophy	Atrophy in affected limb with 2 cm difference between limbs.	Recommended.
Physcal examination: straight leg raise	Positive straight leg raise	Recommended.
Sensory examination	Loss of sensation in affected dermatomes	Recommended.
Medical history	History of radicular pain	Highly recommended.
Computerized tomography	Evidence of neural compression	Recommended.
Lumbar spinal stenosis:		
Computerized tomography	Significant narrowing: spinal cord canal or intervertebral foramen.	Recommended.
Magnetic resonance imaging	Significant narrowing: spinal cord canal or intervertebral foramen.	Recommended.
Myelogram	Significant narrowing: spinal cord canal or intervertebral foramen.	Recommended.
Mechanical complication of internal orthopedic device:		
Medical record review	Documentation of failure of implant following surgical procedure.	Highly recommended.
Osteomalacia:		
X-ray-lumbar sacral spine	Evidence of significant osteomalacia	Recommended.
Magnetic resonance imaging	Evidence of significant osteomalacia	Recommended.
Computerized tomography	Evidence of significant osteomalacia	Recommended.
Osteomyelitis, chronic-lumbar:		
X-ray-lumbar sacral spine	Evidence of chronic infection	Recommended.
Magnetic resonance imaging	Evidence of chronic infection	Recommended.
Computerized tomography	Evidence of chronic infection	Recommended.
Osteoporosis:		
Computerized tomography	Significant bone density loss	Recommended.
Dual photon absorptiometry	Significant bone density loss	Recommended.
X-ray-lumbar sacral spine	Significant bone density loss	Recommended.
Post laminectomy syndrome with radiculopathy:		
Medical record review: lumbar	Documented surgical history of laminectomy	Highly recommended.
Magnetic resonance imaging	Evidence of laminectomy	Recommended.
Electromyography	Definite denervation	Recommended.
Nerve conduction velocity	Definite slowing	Recommended.
Physical examination—atrophy	Atrophy in affected limb with 2 cm difference between limbs.	Recommended.
Physical examination: straight leg raise	Positive straight leg raise	Recommended.
Sensory examiation	Loss of sensation in affected dermatomes	Recommended.
Medical record review: lumbar	History of radicular pain	Highly recommended.
Computerized tomography	Evidence of laminectomy	Recommended.
Myelogram	Evidence of laminectomy	Recommended.
Radiculopathy:		
Magnetic resonance imaging	Evidence of neural compression	Recommended.
Electromyography	Definite denervation	Recommended.
Nerve conduction velocity	Definite slowing	Recommended.
Physical examination—atrophy	Atrophy in affected limb with 2 cm difference between limbs.	Recommended.
Physical examination: straight leg raise	Positive straight leg raise	Recommended.
Sensory examination	Loss of sensation in affected dermatomes	Recommended.
Medical record review: lumbar	History of radicular pain	Highly recommended.
Computerized tomography	Evidence of neural compression	Recommended.
Myelogram	Evidence of neural compression	Recommended.
Sciatica:		
Magnetic resonance imaging	Evidence of neural compression	Recommended.
Electromyography	Definite denervation	Recommended.
Nerve conduction velocity	Definite slowing	Recommended.
Physical examination—atrophy	Atrophy in affected limb with 2 cm difference between limbs.	Recommended.
Physical examination: straight leg raise	Positive straight leg raise	Recommended.
Sensory examination	Loss of sensation in affected dermatones	Recommended.
Medical history	History of radicular pain	Highly recommended.
Computerized tomography	Evidence of neural compression	Recommended.
Myelogram	Evidence of neural compression	Recommended.
Strains and sprains, unspecified:		
Medical record review	History of back pain under medical treatment for at least 1 year.	Highly recommended.
Medical record review	History of back pain unresponsive to therapy for at least 1 year.	Highly recommended.

Confirmatory test	Minimum result	Requirements
Medical record review	History of back pain with functional limitations for at least 1 year.	Highly recommended.
Medical record review	Documented history of strain and/or sprain	Highly recommended.
Spondylolisthesis grade 1:		
X-ray-lumbar sacral spine	1–25% slippage	Recommended.
Computerized tomography	1–25% slippage	Recommended.
Magnetic resonance imaging	1–25% slippage	Recommended.
Spondylolisthesis grade 2:		
X-ray-lumbar sacral spine	26–50% slippage	Recommended.
Computerized tomography	26–50% slippage	Recommended.
Magnetic resonance imaging	26–50% slippage	Recommended.
Spondylolisthesis grade 3:		
X-ray-lumbar sacral spine	51–75% slippage	Recommended.
Computerized tomography	51–75% slippage	Recommended.
Magnetic resonance imaging	51–75% slippage	Recommended.
Spondylolisthesis grade 4:		
X-ray-lumbar sacral spine	Complete slippage	Recommended.
Computerized tomography	Complete slippage	Recommended.
Magnetic resonance imaging	Complete slippage	Recommended.
Spondylolisthesis-acquired:		
X-ray-lumbar sacral spine	Slippage	Recommended.
Computerized tomography	Slippage	Recommended.
Magnetic resonance imaging	Slippage	Recommended.
Spondylolsis:		
X-ray-lumbar sacral spine	Defect—pars interarticularis	Recommended.
Computerized tomography	Defect—pars interarticularis	Recommended.
MRI	Defect—pars interarticularis	Recommended.
Sprains and strains, sacral:		
Medical record review: lumbar	History of back pain under medical treatment for at least 1 year.	Highly recommended.
Medical record review: lumbar	History of back pain unresponsive to therapy for at least 1 year.	Highly recommended.
Medical record review: lumbar	History of back with functional limitations for at least 1 year.	Highly recommended.
Medical record review: lumbar	Documented history of strain and/or sprain	Highly recommended.
Sprains and strains, sacroiliac:		
Medical record review: lumbar	History of back pain under medical treatment for at least 1 year.	Highly recommended.
Medical record review: lumbar	History of back pain unresponsive to therapy for at least 1 year.	Highly recommended.
Medical record review: lumbar	History of back pain with functional limitations for at least 1 year.	Highly recommended.
Medical record review: lumbar	Documented history of strain and/or sprain	Highly recommended.

Disability test	Test result	Disability classification
BODY PART: LS SPINE JOB TITLE: TRAINMAN		
Ankylosing spondylitis:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Backache, unspecified:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Chronic back pain, not otherwise specified:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Cauda equina syndrome with bowel or bladder dysfunction:		
Computerized tomography	Disc extrusion with neural impingement, nerves >L1	D
Magnetic resonance imaging	Disc extrusion with neural impingement, nerves >L1	D
Physical examination	Lower extremity weakness	D
Cystometrogram	Impaired bladder function	D
Myelogram	Disc extrusion with neural impingement, nerves >L1	D
Physical examination: rectal	Impairment of sphincter tone	D
Muscle strength assessment	Lifting capacity diminished by 50%	D
Degeneration of lumbar disc:		
Computerized tomography	Disc extrusion with neural impingement	D
Magnetic resonance imaging	Disc extrusion with neural impingement	D
Myelogram	Disc extrusion with neural impingement	D
Muscle strength assessment	Lifting capacity diminished by 50%	D
Displacement of lumbar disc:		
Computerized tomography	Disc extrusion with neural impingement	D
Magnetic resonance imaging	Disc extrusion with neural impingement	D
Myelogram	Disc extrusion with neural impingement	D

Disability test	Test result	Disability classification
Muscle strength assessment	Lifting capacity diminished by 50%	D
Fracture: vertebral body:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Fracture: posterior spinal element with displacement:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Fracture: posterior spinal element with no displacement:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Muscle strength assessment	Lifting capacity diminished by 50%	D
Fracture: spinous process:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Fracture transverse process:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Intervertebral disc disorder:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Computerized tomography	Disc extrusion with neural impingement	D
Magnetic resonance imaging	Disc extrusion with neural impingement	D
Myelogram	Disc extrusion with neural impingement	D
Lumbago:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Lumbosacral neuritis:		
Computerized tomography	Disc extrusion with neural impingement	D
Magnetic resonance imaging	Disc extrusion with neural impingement	D
Myelogram	Disc extrusion with neural impingement	D
Muscle strength assessment	Lifting capacity diminished by 50%	D
Physical examination	Lower extremity weakness	D
Lumbar spinal stenosis:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Computerized tomography	Significant narrowing of the spinal canal	D
Magnetic resonance imaging	Significant narrowing of the spinal canal	D
Myelogram	Significant narrowing of the spinal canal	D
Physical examination	Significant lower extremity weakness	D
Mechanical complication of internal orthopedic device:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
X-ray flexion/extension	Segmental instability	D
Osteomalacia:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Osteomyelitis, chronic-lumbar:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Medical record review	Frequent flare-ups with objective findings	D
Osteoporosis:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Post laminectomy syndrome with radiculopathy:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Computerized tomography	Disc extrusion with neural impingement	D
Magnetic resonance imaging	Disc extrusion with neural impingement	D
Myelogram	Disc extrusion with neural impingement	D
Physical examination	Significant lower extremity weakness	D
Post laminectomy syndrome:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Computerized tomography	Disc extrusion with neural impingement	D
Magnetic resonance imaging	Disc extrusion with neural impingement	D
Myelogram	Disc extrusion with neural impingement	D
Physical examination	Significant lower extremity weakness	D
X-ray flexion/extension	Segmental instability	D
Radiculopathy:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Computerized tomography	Disc extrusion with neural impingement	D
Magnetic resonance imaging	Disc extrusion with neural impingement	D
Myelogram	Disc extrusion with neural impingement	D
Physical examination	Significant lower extremity weakness	D
Sciatica:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Computerized tomography	Disc extrusion with neural impingement	D
Magnetic resonance imaging	Disc extrusion with neural impingement	D
Myelogram	Disc extrusion with neural impingement	D
Physical examination	Significant lower extremity weakness	D
Strains and sprains, unspecified:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Spondylolisthesis grade 1:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
X-ray flexion/extension	Segmental instability	D
Spondylolisthesis grade 2:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Spondylolisthesis grade 3:		

Disability test	Test result	Disability classification
Muscle strength assessment	Lifting capacity diminished by 50%	D
Spondylolisthesis grade 4:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
X-ray flexion/extension	Segmental instability	D
Spondylisthesis—acquired:		
X-ray flexion/extension	Segmental instability	D
Spondylolysis:		
X-ray flexion/extension	Segmental instability	D
Sprains and strains, sacral:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Sprains and strains, sacroiliac:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Vertebral body compression fracture:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
BODY PART: LS SPINE JOB TITLE: ENGINEER		
Cauda equina syndrome with bowel or bladder dysfunction:		
Computerized tomography	Disc extrusion with neural impingement, nerves <L1	D
Magnetic resonance imaging	Disc extrusion with neural impingement, nerves <L1	D
Physical examination	Lower extremity weakness	D
Cystometrogram	Impaired bladder function	D
Myelogram	Disc extrusion with neural impingement, nerves <L1	D
Physical examination: rectal	Impairment of sphincter tone	D
BODY PART: LS SPINE JOB TITLE: CARMAN		
Ankylosing spondylitis:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Backache, unspecified:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Chronic back pain, not otherwise specified:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Cauda equina syndrome with bowel or bladder dysfunction:		
Computerized tomography	Disc extrusion with neural impingement, nerves <L1	D
Magnetic resonance imaging	Disc extrusion with neural impingement, nerves <L1	D
Physical examination	Lower extremity weakness	D
Cystometrogram	Impaired bladder function	D
Myeolgram	Disc extrusion with neural impingement, nerves <L1	D
Physical examination: rectal	Impairment of sphincter tone	D
Muscle strength assessment	Lifting capacity diminished by 50%	D
Degeneration of lumbar disc:		
Computerized tomography	Disc extrusion with neural impingement	D
Magnetic resonance imaging	Disc extrusion with neural impingement	D
Myelogram	Disc extrusion with neural impingement	D
Muscle strength assessment	Lifting capacity diminished by 50%	D
Displacement of lumbar disc:		
Computerized tomography	Disc extrusion with neural impingement	D
Magnetic resonance imaging	Disc extrusion with neural impingement	D
Myelogram	Disc extrusion with neural impingement	D
Muscle strength assessment	Lifting capacity diminished by 50%	D
Fracture: vertebral body:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Fracture: posterior spinal element with displacement:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Fracture: posterior spinal element with no displacement:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Muscle strength assessment	Lifting capacity diminished by 50%	D
Fracture: spinous process:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Fracture transverse process:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Intervertebral disc disorder:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Computerized tomography	Disc extrusion with neural impingement	D
Magnetic resonance imaging	Disc extrusion with neural impingement	D
Myelogram	Disc extrusion with neural impingement	D
Lumbago:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Lumbosacral neuritis:		

Disability test	Test result	Disability classification
Computerized tomography	Disc extrusion with neural impingement	D
Magnetic resonance imaging	Disc extrusion with neural impingement	D
Myelogram	Disc extrusion with neural impingement	D
Muscle strength assessment	Lifting capacity diminished by 50%	D
Physical examination	Lower extremity weakness	D
Lumbar spinal stenosis:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Computerized tomography	Significant narrowing of the spinal canal	D
Magnetic resonance imaging	Significant narrowing of the spinal canal	D
Myogram	Significant narrowing of the spinal canal	D
Physical examination	Significant lower extremity weakness	D
Mechanical complication of internal orthopedic device:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
X-ray flexion/extension	Segmental instability	D
Osteomalacia:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Osteomyelitis, chronic-lumbar:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Medical record review	Frequent flare-ups with objective findings	D
Osteoporosis:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Post laminectomy syndrome with radiculopathy:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Computerized tomography	Disc extrusion with neural impingement	D
Magnetic resonance imaging	Disc extrusion with neural impingement	D
Myelogram	Disc extrusion with neural impingement	D
Physical examination	Significant lower extremity weakness	D
Post laminectomy syndrome:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Computerized tomography	Disc extrusion with neural impingement	D
Magnetic resonance imaging	Disc extrusion with neural impingement	D
Myelogram	Disc extrusion with neural impingement	D
Physical examination	Significant lower extremity weakness	D
X-ray flexion/extension	Segmental instability	D
Radiculopathy:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Computerized tomography	Disc extrusion with neural impingement	D
Magnetic resonance imaging	Disc extrusion with neural impingement	D
Myelogram	Disc extrusion with neural impingement	D
Physical examination	Significant lower extremity weakness	D
Sciatica:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Computerized tomography	Disc extrusion with neural impingement	D
Magnetic resonance imaging	Disc extrusion with neural impingement	D
Myelogram	Disc extrusion with neural impingement	D
Physical examination	Significant lower extremity weakness	D
Strains and sprains, unspecified:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Spondylolisthesis grade 1:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
X-ray flexion/extension	Segmental instability	D
Spondylolisthesis grade 2:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Spondylolisthesis grade 3:		
Muscle strength assessment	Lifting capacity diminshed by 50%	D
Spondylolisthesis grade 4:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
X-ray flexion/extension	Segmental instability	D
Spondylolisthesis-acquired:		
X-ray flexion/extension	Segmental instability	D
Spondylolysis:		
X-ray flexion/extension	Segmental instability	D
Sprains and strains, sacral:		
Muscle strength assessment	Lifting capacity diminshed by 50%	D
Sprains and strains, sacroiliac:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Vertebral body compression fracture:		
Muscle strength assessment	Lifting capacity diminshed by 50%	D

BODY PART: LS SPINE
JOB TITLE: SIGNALMAN

Ankylosing spondylitis:		
Muscle strength assessment	Lifting capacity diminished by 50%	D

Disability test	Test result	Disability classification
Backache, unspecified:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Chronic back pain, not otherwise specified:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Cauda equina syndrome with bowel or bladder dysfunction:		
Computerized tomography	Disc extrusion with neural impingement, nerves <L1	D
Magnetic resonance imaging	Disc extrusion with neural impingement, nerves <L1	D
Physical examination	Lower extremity weakness	D
Cystometrogram	Impaired bladder function	D
Myelogram	Disc extrusion with neural impingement, nerves <L1	D
Physical examination: rectal	Impairment of sphincter tone	D
Muscle strength assessment	Lifting capacity diminished by 50%	D
Degeneration of lumbar disc:		
Computerized tomography	Disc extrusion with neural impingement	D
Magnetic resonance imaging	Disc extrusion with neural impingement	D
Myelogram	Disc extrusion with neural impingement	D
Muscle strength assessment	Lifting capacity diminished by 50%	D
Displacement of lumbar disc:		
Computerized tomography	Disc extrusion with neural impingement	D
Magnetic resonance imaging	Disc extrusion with neural impingement	D
Myelogram	Disc extrusion with neural impingement	D
Muscle strength assessment	Lifting capacity diminished by 50%	D
Fracture: vertebral body:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Fracture: posterior spinal element with displacement:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Fracture: posterior spinal element with no displacement:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Muscle strength assessment	Lifting capacity diminished by 50%	D
Fracture: spinous process:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Fracture transverse process:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Intervertebral disc disorder:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Computerized tomography	Disc extrusion with neural impingement	D
Magnetic resonance imaging	Disc extrusion with neural impingement	D
Myelogram	Disc extrusion with neural impingement	D
Lumbago:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Lumbosacral neuritis:		
Computerized tomography	Disc extrusion with neural impingement	D
Magnetic resonance imaging	Disc extrusion with neural impingement	D
Myelogram	Disc extrusion with neural impingement	D
Muscle strength assessment	Lifting capacity diminished by 50%	D
Physical examination	Lower extremity weakness	D
Lumbar spinal stenosis:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Computerized tomography	Significant narrowing of the spinal canal	D
Magnetic resonance imaging	Significant narrowing of the spinal canal	D
Myogram	Significant narrowing of the spinal canal	D
Physical examination	Significant lower extremity weakness	D
Mechanical complication of internal orthopedic device:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
X-ray flexion/extension	Segmental instability	D
Osteomalacia:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Osteomyelitis, chronic-lumbar:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Medical record review	Frequent flare-ups with objective findings	D
Osteoporosis:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Post laminectomy syndrome with radiculopathy:		
Muscle strength assessment	Lifing capacity diminished by 50%	D
Computerized tomography	Disc extrusion and neural impingement	D
Magnetic resonance imaging	Disc extrusion with neural impingement	D
Myelogram	Disc extrusion with neural impingement	D
Physical examination	Significant lower extremity weakness	D
Post laminectomy syndrome:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Computerized tomography	Disc extrusion with neural impingement	D
Magnetic resonance imaging	Disc extrusion with neural impingement	D
Myelogram	Disc extrusion with neural impingement	D

Disability test	Test result	Disability classification
Physical examination	Significant lower extremity weakness	D
X-ray flexion/extension	Segmental instability	D
Radiculopathy:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Computerized tomography	Disc extrusion with neural impingement	D
Magnetic resonance imaging	Disc extrusion with neural impingement	D
Myelogram	Disc extrusion with neural impingement	D
Physical examination	Significant lower extremity weakness	D
Sciatica:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Computerized tomography	Disc extrusion with neural impingement	D
Magnetic resonance imaging	Disc extrusion with neural impingement	D
Myelogram	Disc extrusion with neural impingement	D
Physical examination	Significant lower extremity weakness	D
Strains and sprains, unspecified:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Spondylolisthesis grade 1:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
X-ray flexion/extension	Segmental instability	D
Spondylolisthesis grade 2:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Spondylolisthesis grade 3:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Spondylolisthesis grade 4:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
X-ray flexion/extension	Segmental instability	D
Spondylolisthesis-acquired:		
X-ray flexion/extension	Segmental instability	D
Spondylolysis:		
X-ray flexion/extension	Segmental instability	D
Sprains and strains, sacral:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Sprains and strains, sacroiliac:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Vertebral body compression fracture:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
BODY PART: LS SPINE JOB TITLE: TRACKMAN		
Ankylosing spondylitis:		
Muscle strenght assessment	Lifting capacity diminished by 50%	D
Backache, unspecified:		
Muscle strenth assessment	Lifting capacity diminished by 50%	D
Chronic back pain, not otherwise specified:		
Muscle strength assessment	Lifing capacity diminished by 50%	D
Cauda equina sydrome with bowel or bladder dysfunction:		
Computized tomography	Disc extrusion with neural impingement, nerves <L1	D
Magnetic resonance imaging	Disc extrusion with neural impingement, nerves <L1	D
Physical examination	Lower extremity weakness	D
Cystometrogram	Impaired bladder function	D
Myelogram	Disc extrusion with neural impingement, nerves <L1	D
Physical examination: rectal	Impairment of sphincter tone	D
Muscle strength assessment	Lifting capacity diminished by 50%	D
Degeneration of lumbar disc:		
Computerized tomography	Disc extrusion with neural impingement	D
Magnetic resonance imaging	Disc extrusion with neural impingement	D
Myelogram	Disc extrusion with neural impingement	D
Muscle strength assessment	Lifting capacity diminished by 50%	D
Displacement of lumbar disc:		
Computerized tomography	Disc extrusion with neural impingement	D
Magnetic resonance imaging	Disc extrusion with neural impingement	D
Myelogram	Disc extrusion with neural impingement	D
Muscle strength assessment	Lifting capacity diminished by 50%	D
Fracture: vertebral body:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Fracture: posterior spinal element with displacement:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Fracture: posterior spinal element with no displacement:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Muscle strength assessment	Lifting capacity diminished by 50%	D
Fracture: spinous process:		
Muscle strength assessment	Lifting capacity diminished by 50%	D

Disability test	Test result	Disability classification
Fracture transverse process:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Intervertebral disc disorder:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Computerized tomography	Disc extrusion with neural impingement	D
Magnetic resonnace imaging	Disc extrusion with neural impingement	D
Myelogram	Disc extrusion with neural impingement	D
Lumbago:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Lumbosacral neuritis:		
Computerized tomography	Disc extrusion with neural impingement	D
Magnetic resonance imaging	Disc extrusion with neural impingement	D
Myelogram	Disc extrusion with neural impingement	D
Muscle strength assessment	Lifting capacity diminished by 50%	D
Physical examination	Lower extremity weakness	D
Lumbar spinal stenosis:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Computerized tomography	Significant narrowing of the spinal canal	D
Magnetic resonance imaging	Significant narrowing of the spinal canal	D
Myogram	Significant narrowing of the spinal canal	D
Physcial examination	Significant lower extremity weakness	D
Mechanical complication of internal orthopedic device:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
X-ray flexion/extension	Segmental instability	D
Osteomalacia:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Osteomyelitis, chronic-lumbar:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Medical record review	Frequent flare-ups with objective findings	D
Osteoporosis:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Post laminectomy syndrome with radiculopathy:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Computerized tomography	Disc extrusion with neural impingement	D
Magnetic resonance imaging	Disc extrusion with neural impingement	D
Myelogram	Disc extrusion with neural impingement	D
Physical examination	Significant lower extremity weakness	D
Post laminectomy syndrome:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Computerized tomography	Disc extrusion with neural impingement	D
Magnetic resonance imaging	Disc extrusion with neural impingement	D
Myelogram	Disc extrusion with neural impingement	D
Physical examination	Significant lower extremity weakness	D
X-ray flexion/extension	Segmental instability	D
Radiculopathy:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Computerized tomography	Disc extrusion with neural impingement	D
Magnetic resonance imaging	Disc extrusion with neural impingement	D
Myelogram	Disc extrusion with neural impingement	D
Physical examination	Significant lower extremity weakness	D
Sciatica:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Computerized tomography	Disc extrusion with neural impingement	D
Magnetic resonance imaging	Disc extrusion with neural impingement	D
Myelogram	Disc extrusion with neural impingement	D
Physical examination	Significant lower extremity weakness	D
Strains and sprains, unspecified:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Spondylolisthesis grade 1:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
X-ray flexion/extension	Segmental instability	D
Spondylolisthesis grade 2:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Spondylolisthesis grade 3:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Spondylolisthesis grade 4:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
X-ray flexion/extension	Segmental instability	D
Spondylolisthesis-acquired:		
X-ray flexion/extension	Segmental instability	D
Spondylolysis:		
X-ray flexion/extension	Segmental instability	D
Sprains and strains, sacral:		
Muscle strength assessment	Lifting capacity diminished by 50%	D

Disability test	Test result	Disability classification
Sprains and strains, sacroiliac:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Vetebral body compression fracture:		
Muscle strength assessment	Lifting capacity diminished by 50%	
BODY PART: LS SPINE JOB TITLE: MACHINIST		
Ankylosing spondylitis:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Backache, unspecified:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Chronic back pain, not otherwise specified:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Cauda equina syndrome with bowel or bladder dysfunction:		
Computerized tomography	Disc extrusion with neural impingement, nerves <L1	D
Magnetic resonance imaging	Disc extrusion with neural impingement, nerves <L1	D
Physical examination	Lower extremity weakness	D
Cystometrogram	Impaired bladder function	D
Myelogram	Disc extrusion with neural impingement, nerves <L1	D
Physical examination: rectal	Impairment of sphincter tone	D
Muscle strength assessment	Lifting capacity diminished by 50%	D
Degeneration of lumbar disc:		
Computerized tomography	Disc extrusion with neural impingement	D
Magnetic resonance imaging	Disc extrusion with neural impingement	D
Myelogram	Disc extrusion with neural impingement	D
Muscle strength assessment	Lifting capacity diminished by 50%	D
Displacement of lumbar disc:		
Computerized tomography	Disc extrusion with neural impingement	D
Magnetic resonance imaging	Disc extrusion with neural impingement	D
Myelogram	Disc extrusion with neural impingement	D
Muscle strength assessment	Lifting capacity diminished by 50%	D
Fracture: vertebral body:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Fracture: posterior spinal element with displacement:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Fracture: posterior spinal element with no displacement:		
Muscle strength assessment	Lifting capacity diminished	D
Muscle strength assessment	Lifting capacity diminished by 50%	D
Muscle strength assessment	Lifting capacity diminished by 50%	D
Fracture: spinous process:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Fracture transverse process:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Intervertebral disc disorder:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Computerized tomography	Disc extrusion with neural impingement	D
Magnetic resonance imaging	Disc extrusion with neural impingement	D
Myelogram	Disc extrusion with neural impingement	D
Lumbago:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Lumbosacral neuritis:		
Computerized tomography	Disc extrusion with neural impingement	D
Magnetic resonance imaging	Disc extrusion with neural impingement	D
Myelogram	Disc extrusion with neural impingement	D
Muscle strength assessment	Lifting capacity diminished by 50%	D
Physical examination	Lower extremity weakness	D
Lumbar spinal stenosis:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Computerized tomography	Significant narrowing of the spinal canal	D
Magnetic resonance imaging	Significant narrowing of the spinal canal	D
Myogram	Significant narrowing of the spinal canal	D
Physical examination	Significant lower extremity weakness	D
Mechanical complication of internal orthopedic device:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
X-ray flexion/extension	Segmental instability	D
Osteomalacia:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Osteomyelitis, chronic-lumbar:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Medical record review	Frequent flare-ups with objective findings	D
Osteoporosis:		
Muscle strength assessment	Lifting capacity diminished by 50%	D

Disability test	Test result	Disability classification
Post laminectomy syndrome with radiculopathy:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Computerized tomography	Disc extrusion with neural impingement	D
Magnetic resonance imaging	Disc extrusion with neural impingement	D
Myelogram	Disc extrusion with neural impingement	D
Physical examination	Significant lower extremity weakness	D
Post laminectomy syndrome:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Computerized tomography	Disc extrusion with neural impingement	D
Magnetic resonance imaging	Disc extrusion with neural impingement	D
Myelogram	Disc extrusion with neural impingement	D
Physical examination	Significant lower extremity weakness	D
X-ray flexion/extension	Segmental instability	D
Radiculopathy:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Computerized tomography	Disc extrusion with neural impingement	D
Magnetic resonance imaging	Disc extrusion with neural impingement	D
Myelogram	Disc extrusion with neural impingement	D
Physical examination	Significant lower extremity weakness	D
Sciatica:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Computerized tomography	Disc extrusion with neural impingement	D
Magnetic resonance imaging	Disc extrusion with neural impingement	D
Myelogram	Disc extrusion with neural impingement	D
Physical examination	Significant lower extremity weakness	D
Strains and sprains, unspecified:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Spondylolisthesis grade I:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
X-ray flexion/extension	Segmental instability	D
Spondylolisthesis grade 2:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Spondyloisthesis grade 3:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Spondylolisthesis grade 4:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
X-ray flexion/extension	Segmental instability	D
Spondylolisthesis-acquired:		
X-ray flexion/extension	Segmental instability	D
Spondylolysis:		
X-ray flexion/extension	Segmental instability	D
Sprains and strains, sacral:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Sprains and strains, sacroiliac:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Vertebral body compression fracture:		
Muscle strength assessment	Lifting capacity diminished by 50%	D

BODY PART: LS SPINE
JOB TITLE: SHOP LABORER

Ankylosing spondylitis:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Backache, unspecified:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Chronic back pain, not otherwise specified:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Cauda equina syndrome with bowel or bladder dysfunction:		
Computerized tomography	Disc extrusion with neural impingement, nerves <L1	D
Magnetic resonance imaging	Disc extrusion with neural impingement, nerves <L1	D
Physical examination	Lower extremity weakness	D
Cystometrogram	Impaired bladder function	D
Myelogram	Disc extrusion with neural impingement, nerves <L1	D
Physical examination: rectal	Impairment of sphincter tone	D
Muscle strength assessment	Lifting capacity diminished by 50%	D
Degeneration of lumbar disc:		
Computerized tomography	Disc extrusion with neural impingement	D
Magnetic resonance imaging	Disc extrusion with neural impingement	D
Myelogram	Disc extrusion with neural impingement	D
Muscle strength assessment	Lifting capacity diminished by 50%	D
Displacement of lumber disc:		
Computerized tomography	Disc extrusion with neural impingement	D
Magnetic resonance imaging	Disc extrusion with neural impingement	D

Disability test	Test result	Disability classification
Myelogram	Disc extrusion with neural impingement	D
Muscle strength assessment	Lifting capacity diminished by 50%	D
Fracture: vertebral body:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Fracture: posterior spinal element with displacement:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Fracture: posterior spinal element with no displacement:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Fracture: spinous process:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Fracture transverse process:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Intervertebral disc disorder:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Computerized tomography	Disc extrusion with neural impingement	D
Magnetic resonance imaging	Disc extrusion with neural impingement	D
Myelogram	Disc extrusion with neural impingement	D
Lumbago:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Lumbosacral neuritis:		
Computerized tomography	Disc extrusion with neural impingement	D
Magnetic resonance imaging	Disc extrusion with neural impingement	D
Myelogram	Disc extrusion with neural impingement	D
Muscle strength assessment	Lifting capacity diminished by 50%	D
Physical examination	Lower extremity weakness	D
Lumbar spinal stenosis:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Computerized tomography	Significant narrowing of the spinal canal	D
Magnetic resonance imaging	Significant narrowing of the spinal canal	D
Myogram	Significant narrowing of the spinal canal	D
Physical examination	Significant lower extremity weakness	D
Mechanical complication of internal orthopedic device:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
X-ray flexion/extension	Segmental instability	D
Osteomalacia:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Osteomyelitis, chronic-lumbar:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Medical record review	Frequent flare-ups with objective findings	D
Osteoporosis:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Post laminectomy syndrome with radiculopathy:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Computerized tomography	Disc extrusion with neural impingement	D
Magnetic resonance imaging	Disc extrusion with neural impingement	D
Myelogram	Disc extrusion with neural impingement	D
Physical examination	Significant lower extremity weakness	D
Post laminectomy syndrome:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Computerized tomography	Disc extrusion with neural impingement	D
Magnetic resonance imaging	Disc extrusion with neural impingement	D
Myelogram	Disc extrustion with neural impingement	D
Physical examination	Significant lower extremity weakness	D
X-ray flexion/extension	Segmental instability	D
Radiculpathy:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Computerized tomography	Disc extrusion with neural impingement	D
Magnetic resonance imaging	Disc extrusion with neural impingement	D
Myelogram	Disc extrusion with neural impingement	D
Physical examination	Significant lower extremity weakness	D
Sciatica:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Computerized tomography	Disc extrusion with neural impingement	D
Magnetic resonance imaging	Disc extrusion with neural impingement	D
Myelogram	Disc extrusion with neural impingement	D
Physical examination	Significant lower extremity weakness	D
Strains and sprains, unspecified:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Spondylolisthesis grade 1:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
X-ray flexion/extension	Segmental instability	D
Spondylolisthesis grade 2:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Spondylolisthesis grade 3:		

Disability test	Test result	Disability classification
Muscle strength assessment	Lifting capacity diminished by 50%	D
Spondylolisthesis grade 4:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
X-ray flexion/extension	Segmental instability	D
Spondylolisthesis-acquired:		
X-ray flexion/extension	Segmental instability	D
Spondylolysis:		
X-ray flexion/extension	Segmental instability	D
Sprains and strains, sacral:		
Muscle strength assessment .	Lifting capacity diminished by 50%	D
Sprains and strains, sacroiliac:		
Muscle strength assessment	Lifting capacity diminished by 50%	D
Vertebral body compression fracture:		
Muscle strength assessment	Lifting capacity diminished by 50%	D

F. Cervical Spine

Confirmatory test	Minimum result	Requirements
BODY PART: CE SPINE CONFIRMATORY TESTS		
Cervical disc disease with myelopathy:		
Physical examination: cervical	Evidence of myelopathy	Highly recommended.
Myelogram	Evidence of neurogenic compression	Recommended.
Computerized azial tomography	Evidence of neurogenic compression	Recommended.
Magnetic resonance imaging	Evidence of neurogenic compression	Recommended.
Chronic herniated disc:		
X-ray: cervical spine	Evidence of significant disc degeneration	Recommended.
Myelogram	Evidence of significant disc degeneration	Recommended.
Computerized axial tomography	Significant disc degeneration	Recommended.
Magnetic resonance imaging	Significant disc degeneration	Recommended.
Cervical spondylolysis:		
X-ray: cervical spine	Evidence of significant disc degeneration	Recommended.
Computerized axial tomography	Evidence of significant disc degeneration	Recommended.
Magnetic resonance imaging	Evidence of significant disc degeneration	Recommended.
Cervical intervertebral disc degeneration:		
X-ray: cervical spine	Evidence of significant disc degeneration	Recommended.
Myelogram	Evidence of significant disc degeneration	Recommended.
Magnetic resonance imaging	Evidence of significant disc degeneration	Recommended.
Fracture: posterior element with spinal canal displacement:		
X-ray: cervical spine	Fractured posterior element with canal displacement	Recommended.
Computerized axial tomography	Fractured posterior element with canal displacement	Recommended.
Magnetic resonance imaging	Fractured posterior element with canal displacement	Recommended.
Fracture: transverse, spinous or posterior process:		
X-ray: cervical spine	Fracture of relevant part	Recommended.
Computerized axial tomography	Fracture of relevant part	Recommended.
Magnetic resonance imaging	Fracture of relevant part	Recommended.
Osteoarthritis, cervical:		
X-ray: cervical spine	Evidence of extensive joint degeneration	Recommended.
Computerized axial tomography	Evidence of extensive joint degeneration	Recommended.
Magnetic resonance imaging	Evidence of extensive joint degeneration	Recommended.
Post laminectomy syndrome:		
Medical records: cervical	Confirmed surgical history	Highly recommended.
Medical records: cervical	Continued pain post-surgery	Highly recommended.
Radiculopathy:		
Medical records: cervical	History of radicular pain	Highly recommended.
Physical examination: arm	Loss of reflexes in affected dermatomes	Recommended.
Physical examination: arm	Evidence of atrophy >2 cm	Recommended.
Electromyography	Definite denervation in muscle of affected nerve root	Recommended.
Myelogram	Evidence of neurogenic compression	Recommended.
Magnetic resonance imaging	Compression of spinal nerves	Recommended.
Computerized axial tomography	Compression of spinal nerves	Recommended.
Rheumatoid arthritis, cervical:		
Rheumatoid factor (blood test)	High titer	Recommended.
X-ray: cervical spine	Rheumatoid changes of spine	Highly recommended.
Medical records review: cervical	Confirmation by rheumatologist or internist	Highly recommended.
Spondylogenic compression of spinal cord:		
Physical examination: cervical	Evidence of myelopathy	Highly recommended.
Computerized axial tomography	Evidence of neurogenic compression	Recommended.
Magnetic resonance imaging	Evidence of neurogenic compression	Recommended.

Confirmatory test	Minimum result	Requirements
Myelogram	Evidence of neurogenic compression	Recommended.

Disability test	Test result	Disability classification
BODY PART: CE SPINE JOB TITLE: TRAINMAN		
Cervical disc disease with myelopathy:		
Computerized axial tomography	Significant spinal cord pressure	D
Magnetic resonance imaging	Significant spinal cord pressure	D
Myelogram	Significant spinal cord pressure	D
Cystometrogram	Impaired bladder function	D
Physical examination: rectal	Impairment of sphincter tone	
Physical examination: lower limb	Lower extremity weakness or significant spasticity	D
Physical examination: cervical	Multi-level neurologic compromise	D
Chronic herniated disc:		
Physical examination: cervical	Multi-level neurologic compromise	D
Cervical spondylolysis:		
Physical examination: cervical	Multi-level neurologic compromise	D
Cervical intervertebral disc degeneration:		
Physical examination: cervical	Multi-level neurologic compromise	D
Fracture: posterior element with spinal canal displacement:		
Physical examination: cervical	Multi-level neurologic compromise	D
Post laminectomy syndrome:		
Physical examination: cervical	Multi-level neurologic compromise	D
Cervical radiculopathy:		
Physical examination: cervical	Multi-level neurologic compromise	D
Spondylogenic compression of spinal cord:		
Computerized axial tomography	Significant spinal cord pressure	D
Magnetic resonance imaging	Significant spinal cord pressure	D
Cystometrogram	Impaired bladder function	D
Myelogram	Significant spinal cord pressure	D
Physical examination: rectal	Impairment of sphincter tone	D
Physical examination: cervical	Multi-level neurologic compromise	D
Physical examination: lower limb	Lower extremity weakness or spasticity	D
BODY PART: CE SPINE JOB TITLE: ENGINEER		
Cervical disc disease with myelopathy:		
Computerized axial tomography	Significant spinal cord pressure	D
Magnetic resonance imaging	Significant spinal cord pressure	D
Myelogram	Significant spinal cord pressure	D
Cystometrogram	Impaired bladder function	D
Physical examination: rectal	Impairment of sphincter tone	D
Physical examination: lower limb	Lower extremity weakness or significant spasticity	D
Physical examination: cervical	Multi-level neurologic compromise	D
Chronic herniated disc:		
Physical examination: cervical	Multi-level neurologic compromise	D
Cervical spondylolysis:		
Physical examination: cervical	Multi-level neurologic compromise	D
Cervical intervertebral disc degeneration:		
Physical examination: cervical	Multi-level neurologic compromise	D
Fracture: posterior element with spinal canal displacement:		
Physical examination: cervical	Multi-level neurologic compromise	D
Post laminectomy syndrome:		
Physical examination: cervical	Multi-level neurologic compromise	D
Cervical radiculopathy:		
Physical examination: cervical	Multi-level neurologic compromise	D
Spondylogenic compression of spinal cord:		
Computerized axial tomography	Significant spinal cord pressure	D
Magnetic resonance imaging	Significant spinal cord pressure	D
Cystometrogram	Impaired bladder function	D
Myelogram	Significant spinal cord pressure	D
Physical examination: rectal	Impairment of sphincter tone	D
Physical examination: cervical	Multi-level neurologic compromise	D
Physical examination: lower limb	Lower extremity weakness or spasticity	D
BODY PART: CE SPINE JOB TITLE: DISPATCHER		
Cervical disc disease with myelopathy:		

Disability test	Test result	Disability classification
Cystometrogram	Impaired bladder function	D
Physical examination: rectal	Impairment of sphincter tone	D
Spondylogenic compression of spinal cord:		
Cystometrogram	Impaired bladder function	D
Physical examination: rectal	Impairment of sphincter tone	D
BODY PART: CE SPINE JOB TITLE: CARMAN		
Cervical disc disease with myelopathy:		
Computerized axial tomography	Significant spinal cord pressure	D
Magnetic resonance imaging	Significant spinal cord pressure	D
Myelogram	Significant spinal cord pressure	D
Cystometrogram	Impaired bladder function	D
Physical examination: rectal	Impairment of sphincter tone	D
Physical examination: lower limb	Lower extremity weakness or significant spasticity	D
Physical examination: cervical	Multi-level neurologic compromise	D
Chronic herniated disc:		
Physical examination: cervical	Multi-level neurologic compromise	D
Cervical spondylolysis:		
Physical examination: cervical	Multi-level neurologic compromise	D
Cervical intervertebral disc degeneration:		
Physical examination: cervical	Multi-level neurologic compromise	D
Fracture: posterior element with spinal canal displacement:		
Physical examination: cervical	Multi-level neurologic compromise	D
Post laminectomy syndrome:		
Physical examination: cervical	Multi-level neurologic compromise	D
Cervical radiculopathy:		
Physical examination: cervical	Multi-level neurologic compromise	D
Spondylogenic compression of spinal cord:		
Computerized axial tomography	Significant spinal cord pressure	D
Magnetic resonance imaging	Significant spinal cord pressure	D
Cystometrogram	Impaired bladder function	D
Myelogram	Significant spinal cord pressure	D
Physical examination: rectal	Impairment of sphincter tone	D
Physical examination: cervical	Multi-level neurologic compromise	D
Physical examination: lower limb	Lower extremity weakness or spasticity	D
BODY PART; CE SPINE JOB TITLE: SIGNALMAN		
Cervical disc disease with myelopathy:		
Computerized axial tomography	Significant spinal cord pressure	D
Magnetic resonance imaging	Significant spinal cord pressure	D
Myelogram	Significant spinal cord pressure	D
Cystometrogram	Impaired bladder function	D
Physical examination: rectal	Impairment of sphincter tone	D
Physical examination: lower limb	Lower extremity weakness or significant spasticity	D
Physical examination: cervical	Multi-level neurologic compromise	D
Chronic herniated disc:		
Physical examination: cervical	Multi-level neurologic compromise	D
Cervical spondylolysis:		
Physical examination: cervical	Multi-level neurologic compromise	D
Cervical intervertebral disc degeneration:		
Physical examination: cervical	Multi-level neurologic compromise	D
Fracture: posterior element with spinal canal displacement:		
Physical examination: cervical	Multi-level neurologic compromise	D
Post laminectomy syndrome:		
Physical examination: cervical	Multi-level neurologic compromise	D
Cervical radiculopathy:		
Physical examination: cervical	Multi-level neurologic compromise	D
Spondylogenic compression of spinal cord:		
Computerized axial tomography	Significant spinal cord pressure	D
Magnetic resonance imaging	Significant spinal cord pressure	D
Cystometrogram	Impaired bladder function	D
Myelogram	Significant spinal cord pressure	D
Physical examination: rectal	Impairment of sphincter tone	D
Physical examination: cervical	Multi-level neurologic compromise	D
Physical examination: lower limb	Lower extremity weakness or spasticity	D

Disability test	Test result	Disability classification
BODY PART: CE SPINE JOB TITLE: TRACKMAN		
Cervical disc disease with myelopathy:		
Computerized axial tomography	Significant spinal cord pressure	D
Magnetic resonance imaging	Significant spinal cord pressure	D
Myelogram	Significant spinal cord pressure	D
Cystometrogram	Impaired bladder function	D
Physical examination: rectal	Impairment of sphincter tone	D
Physical examination: lower limb	Lower extremity weakness or significant spasticity	D
Physical examination: cervical	Multi-level neurologic compromise	D
Chronic herniated disc:		
Physical examination: cervical	Multi-level neurologic compromise	D
Cervical spondyloysis:		
Physical examination: cervical	Multi-level neurologic compromise	D
Cervical intervertebral disc degeneration:		
Physical examination: cervical	Multi-level neurologic compromise	D
Fracture: posterior element with spinal canal displacement:		
Physical examination: cervical	Multi-level neurologic compromise	D
Post laminectomy syndrome:		
Physical examination: cervical	Multi-level neurologic compromise	D
Cervical radiculopathy:		
Physical examination: cervical	Multi-level neurologic compromise	D
Spondylogenic compression of spinal cord:		
Computerized axial tomography	Significant spinal cord pressure	D
Magnetic resonance imaging	Significant spinal cord pressure	D
Cystometrogram	Impaired bladder function	D
Myelogram	Significant spinal cord pressure	D
Physical examination: rectal	Impairment of sphincter tone	D
Physical examination: cervical	Multi-level neurologic compromise	D
Physical examination: lower limb	Lower extremity weakness or spasticity	D
BODY PART: CE SPINE JOB TITLE: MACHINIST		
Cervical disc disease with myelopathy:		
Computerized axial tomography	Significant spinal cord pressure	D
Magnetic resonance imaging	Significant spinal cord pressure	D
Myelogram	Significant spinal cord pressure	D
Cystometrogram	Impaired bladder function	D
Physical examination: rectal	Impairment of sphincter tone	D
Physical examination: lower limb	Lower extremity weakness or significant spasticity	D
Physical examination: cervical	Multi-level neurologic compromise	D
Chronic herniated disc:		
Physical examination: cervical	Multi-level neurologic compromise	D
Cervical spondylolysis:		
Physical examination: cervical	Multi-level neurologic compromise	D
Cervical intervertebral disc degeneration:		
Physical examination: cervical	Multi-level neurologic compromise	D
Fracture: posterior element with spinal canal displacement:		
Physical examination: cervical	Multi-level neurologic compromise	D
Post laminectomy syndrome:		
Physical examination: cervical	Multi-level neurologic compromise	D
Cervical radiculopathy:		
Physical examination: cervical	Multi-level neurologic compromise	D
Spondylogenic compression of spinal cord:		
Computerized axial tomography	Significant spinal cord pressure	D
Magnetic resonance imaging	Significant spinal cord pressure	D
Cystometrogram	Impaired bladder function	D
Myelogram	Significant spinal cord pressure	D
Physical examination: rectal	Impairment of sphincter tone	D
Physical examination: cervical	Multi-level neurologic compromise	D
Physical examination: lower limb	Lower extremity weakness or spasticity	D
BODY PART: CE SPINE JOB TITLE: SHOP LABORER		
Cervical disc disease with myelopathy:		
Computerized axial tomography	Significant spinal cord pressure	D
Magnetic resonance imaging	Significant spinal cord pressure	D
Myelogram	Significant spinal cord pressure	D
Cystometrogram	Impaired bladder function	D

Disability test	Test result	Disability classification
Physical examination: rectal	Impairment of sphincter tone	D
Physical examination: lower limb	Lower extremity weakness or significant spasticity	D
Physical examination: cervical	Multi-level neurologic compromise	D
Chronic herniated disc:		
Physical examination: cervical	Multi-level neurologic compromise	D
Cervical spondylolysis:		
Physical examination: cervical	Multi-level neurologic compromise	D
Cervical intervertebral disc degeneration:		
Physical examination: cervical	Multi-level neurologic compromise	D
Fracture: posterior element with spinal canal displacement:		
Physical examination: cervical	Multi-level neurologic compromise	D
Post laminectomy syndrome:		
Physical examination: cervical	Multi-level neurologic compromise	D
Cervical radiculopathy:		
Physical examination: cervical	Multi-level neurologic compromise	D
Spondylogenic compression of spinal cord:		
Computerized axial tomography	Significant spinal cord pressure	D
Magnetic resonance imaging	Significant spinal cord pressure	D
Cystometrogram	Impaired bladder function	D
Myelogram	Significant spinal cord pressure	D
Physical examination: rectal	impairment of sphincter tone	D
Physical examination: cervical	Multi-level neurologic compromise	D
Physical examination: lower limb	Lower extremity weakness or spasticity	D
BODY PART: CE SPINE JOB TITLE: SALES REPRESENTATIVE		
Cervical disc disease with myelopathy:		
Cystometrogram	Impaired bladder function	D
Physical examination: rectal	Impairment of sphincter tone	D
Spondylogenic compression of spinal cord:		
Cystometrogram	Impaired bladder function	D
Physical examination: rectal	Impairment of sphincter tone	D
BODY PART: CE SPINE JOB TITLE: GENERAL OFFICE CLERK		
Cervical disc disease with myelopathy:		
Cystometrogram	Impaired bladder function	D
Physical examination: rectal	Impairment of sphincter tone	D
Spondylogenic compression of spinal cord:		
Cystometrogram	Impaired bladder function	D
Physical examination: rectal	Impairment of sphincter tone	D

G. Shoulder

Confirmatory test	Minimum result	Requirements.
BODY PART: SHOULDER AND ELBOW CONFIRMATORY TESTS		
Arthritis, acromioclavicular:		
X-ray: shoulder	Significant degenerative changes of joint	Recommended.
Computerized tomography	Significant degenerative changes of joint	Recommended.
Magnetic resonance imaging	Significant degenerative changes of joint	Recommended.
Arthritis, glenohumeral:		
X-ray: shoulder	Significant degenerative changes of joint	Recommended.
Computerized tomography	Significant degenerative changes of joint	Recommended.
Magnetic resonance imaging	Significant degenerative changes of joint	Recommended.
Rotator cuff tear:		
Computerized tomography	Tear of rotator cuff	Recommended.
Magnetic resonance imaging	Tear of rotator cuff	Recommended.
Magnetic resonance imaging	Tear of rotator cuff	Recommended.
Permanent functional limitation, elbow:		
Medical record review	Condition with permanent functional limitation	Highly recommended.
X-ray: elbow	Imaging confirmation of functional diagnosis	Recommended.
Magnetic resonance imaging	Imaging confirmation of functional diagnosis	Recommended.

Disability test	Test result	Disability classification
BODY PART: SHOULDER AND ELBOW Job TITLE: TRAINMAN		
Arthritis, acromioclavicular:		
Physical examination—range of motion	<40 degrees flexion	D
Physical examination—range of motion	<40 degrees abduction	D
Arthritis, glenohumeral:		
Physical examination—range of motion	<40 degrees flexion	D
Physical examination—range of motion	<40 degrees abduction	D
Rotator cuff tear:		
Physical examination—range of motion	<40 degrees flexion	D
Physical examination—range of motion	<40 degrees abduction	D
Permanent functional limitation, elbow:		
Physical examination	>40 degrees deviation	D
Physical examination—range of motion	Flexion limit to 60 degrees (30 degrees from 90)	D
BODY PART: SHOULDER AND ELBOW JOB TITLE: ENGINEER		
Arthritis, acromioclavicular:		
Physical examination—range of motion	<40 degrees flexion	D
Physical examination—range of motion	<40 degrees abduction	D
Arthritis, glenohumeral:		
Physical examination—range of motion	<40 degrees flexion	D
Physical examination—range of motion	<40 degrees abudction	D
Rotator cuff tear:		
Physical examination—range of motion	<40 degrees flexion	D
Physical examination—range of moiton	<40 degrees abduction	D
Permanent functional limitation, elbow:		
Physical examination	>40 degrees deviation	D
Physical examination—range of motion	Flexion limit to 60 degrees (30 degrees from 90)	D
BOFY PSTY: SHOULDER AND ELBOW JOB TITLE: CARMAN		
Arthritis, acromioclavicular:		
Physical examination—range of motion	<40 degrees flexion	D
Physical examination—range of motion	<40 degrees abduction	D
Arthritis, glenohumeral:		
Physical examination—range of motion	<40 degrees flexion	D
Physical examination—range of motion	<40 degrees abduction	D
Rotator cuff tear:		
Physical examination—range of motion	<40 degrees flexion	D
Physical examination—range of motion	<40 degrees abduction	D
Permanent functional limitation, elbow:		
Physical examination	>40 degrees deviation	D
Physical examination—range of motion	Flexion limit to 60 degrees (30 degrees from 90)	D
BODY PART: SHOULDER AND ELBOW JOB TITLE: SIGNALMAN		
Arthritis, acromioclavicular:		
Physical examination—range of motion	<40 degrees flexion	D
Physical examination—range of motion	<40 degrees abduction	D
Arthritis, glenohumeral:		
Physical examination—range of motion	<40 degrees flexion	D
Physical examination—range of motion	<40 degrees abduction	D
Rotator cuff tear:		
Physical examination—range of motion	<40 degrees flexion	D
Physical examination—range of motion	<40 degrees abduction	D
Permanent functional limitation, elbow:		
Physical examination	>40 degrees deviation	D
Physical examination—range of motion	Flexion limit to 60 degrees (30 degrees from 90)	D
BODY Part: SHOULDER AND ELBOW JOB TITLE: TRACKMAN		
Arthritis, acromioclavicular:		
Physical examination—range of motion	<40 degrees flexion	D
Physical examination—range of motion	<40 degrees abduction	D
Arthritis, glenohumeral:		
Physical examination—range of motion	<40 degrees flexion	D
Physical examination—range of motion	<40 degrees abduction	D
Rotator cuff tear:		
Physical examination—range of motion	<40 degrees flexion	D

Disability test	Test result	Disability classification
Physical examination—range of motion	<40 degrees abduction	D
Permanent functional limitation, elbow:		
Physical examination	>40 degrees deviation	D
Physical examination—range of motion	Flexion limit to 60 degrees (30 degrees from 90)	D
BODY PART: SHOULDER AND ELBOW JOB TITLE: MACHINIST		
Arthritis, acromioclavicular:		
Physical examination—range of motion	<40 degrees flexion	D
Physical examination—range of motion	<40 degrees abduction	D
Arthritis, glenohumeral:		
Physical examination—range of motion	<40 degrees flexion	D
Physical examination—range of motion	<40 degrees abduction	D
Rotator cuff tear:		
Physical examination—range of motion	<40 degrees flexion	D
Physical examination—range of motion	<40 degrees abduction	D
Permanent functional limitation, elbow:		
Physical examination	>40 degrees deviation	D
Physical examination—range of motion	Flexion limit to 60 degrees (30 degrees from 90)	D
BODY PART: SHOULDER AND ELBOW JOB TITLE: SHOP LABORER		
Arthritis, acromioclavicular:		
Physical examination—range of motion	<40 degrees flexion	D
Physical examination—range of motion	<40 degrees abduction	D
Arthritis, glenohumeral:		
Physical examination—range of motion	<40 degrees flexion	D
Physical examination—range of motion	<40 degrees abduction	D
Rotator cuff tear:		
Physical examination—range of motion	<40 degrees flexion	D
Physical examination—range of motion	<40 degrees abduction	D
Permanent functional limitation, elbow:		
Physical examination	>40 degrees deviation	D
Physical examination—range of motion	Flexion limit to 60 degrees (30 degrees from 90)	D

H. Arm and Hand

Confirmatory test	Minimum result	Requirements;
BODY PART: HAND AND ARM CONFIRMATORY TESTS		
Carpal tunnel syndrome:		
Medical record review	Pain, paresthesia and weakness in distribution median nerve.	Highly recommended.
Physical examination	Tinel's or Phalen's sign-suggestive but not confirmatory	Recommended.
Nerve conduction testing	Definite median nerve conduction showing at wrist	Highly recommended.
Electromyography	Denervation in serve cases	Recommended.
Fracture: wrist:		
X-ray: wrist	Evidence of fracture	Highly recommended.
Hand: permanent functional limitation:		
Medical record review	Documentation of medical condition for permanent limitation.	Highly recommended.
Physical examination	Definite reproducible evidence of limitation	Highly recommended.
Imaging study (e.g. x-ray, CAT, MRI)	Positive confirmation of underlying condition	Highly recommended.
Rheumatoid arthritis: hand:		
Rheumatoid factor	High titer	Recommended.
Medical record review	History of objective findings including serological studies	Highly recommended.
X-ray: Hand	Characteristic rheumatoid changes	Highly recommended.
Tenosynovitis:		
Medical record review	History of chronic tenosynovitis and objective findings	Highly recommended.
Physical examination	Definite evidence of tenosynovitis	Highly recommended.
Thumb: Permanent functional limitation:		
Medical record review	Documentation of medical condition for permanent limitation.	Highly recommended.
Physical examination	Definite reproducible evidence of limitation	Highly recommended.
Imaging study (x-ray, CAT, MRI)	Positive confirmation of underlying condition	Highly recommended.
Wrist: Permanent functional limitation:		
Medical record review	Documentation of medical condition for permanent limitation.	Highly recommended.
Physical examination	Definite reproducible evidence of limitation	Highly recommended.

Confirmatory test	Minimum result	Requirements;
Imaging study (e.g. x-ray, CAT, MRI)	Positive confirmation of underlying condition	Highly recommended.

Disability test	Test result	Disability classification
BODY PART: HAND AND ARM JOB TITLE: TRAINMAN		
Carpal tunnel syndrome:		
Strength (jamar)	Dominant hand: <19 kg (female)	D
Strength (jamar)	Nondominant hand: <16 kg (female)	D
Strength (jamar)	Dominant hand: <34 kg (male)	D
Strength (jamar)	Nondominant hand: <34 kg (male)	D
Fracture, wrist:		
Strength (jamar)	Dominant hand: <19 kg (female)	D
Strength (jamar)	Nondominant hand: <16 kg (female)	D
Strength (jamar)	Dominant hand: <34 kg (male)	D
Strength (jamar)	Nondominant hand: <34 kg (male)	D
Physical examination—range of motion	Extension—limit to 30 degrees	D
Physical examination—range of motion	Flexion—limit to 30 degrees	D
Physical examination—range of motion	Ankylosis: >20 degrees from neutral	D
Hand: permanent functional limitation:		
Strength (jamar)	Dominant hand: <19 kg (female)	D
Strength (jamar)	Nondominant hand: <16 kg (female)	D
Strength (jamar)	Dominant hand: <34 kg (male)	D
Strength (jamar)	Nondominant hand: <34 kg (male)	D
Rheumatoid arthritis hand:		
Physical examination	Significant deformity	D
Medical record review	Significant flare-ups, under treatment with rheumatologist.	D
Medical record review	Extensive medication use, under treatment with rheumatologist.	D
Thumb: permanent functional limitation:		
Adduction of thumb	Loss <=4 cm	D
Adduction of thumb	Loss <=7 cm	D
Ankylosis: degree from neutral	<20 degrees extension	D
Ankylosis: degree from neutral	<40 degrees flexion	D
Loss of extension or flexion	MCP or PIP: maximum flexion <40 degrees	D
Opposition	Loss <=4 cm	D
Opposition	Loss <=7 cm	D
Wrist: permanent functional limitation:		
Strength (jamar)	Dominant hand: <19 kg (female)	D
Strength (jamar)	Nondominant hand: <16 kg (female)	D
Strength (jamar)	Dominant hand: <34 kg (male)	D
Strength (jamar)	Nondominant hand: <34 kg (male)	D
Physical examination—range of motion	Extension—limit to 30 degrees	D
Physical examination—range of motion	Flexion—limit to 30 degrees	D
Physical examination—range of motion	Ankylosis: >20 degrees from neutral	D
BODY PART: HAND AND ARM JOB TITLE ENGINEER		
Fracture, wrist:		
Physical examination—range of motion	Extension-limit to 30 degrees	D
Physical examination—range of motion	Flexion-limit to 30 degrees	D
Physical examination—range of motion	Ankylosis: >20 degrees from neutral	D
Rheumatoid arthritis hand:		
Physical examination	Significant deformity	D
Medical record review	Significant flare-ups, under treatment with rheumatologist.	D
Medical record review	Extensive medication use, under treatment with rheumatologist.	D
Thumb: permanent functional limitation:		
Adduction of thumb	Loss <=4 cm	D
Adduction of thumb	Loss <=7 cm	D
Ankylosis: degree from neutral	<20 degrees extension	D
Ankylosis: degree from neutral	<40 degrees flexion	D
Loss of extension or flexion	MCP or PIP: maximum flexion <40 degrees	D
Opposition	Loss <=4 cm	D
Opposition	Loss <=7 cm	D
Wrist: permanent functional limitation:		
Physical examination—range of motion	Extension—limit to 30 degrees	D
Physical examination—range of motion	Flexion—limit to 30 degrees	D

Disability test	Test result	Disability classification
Physical examination—range of motion	Ankylosis: >20 degrees from neutral	D
BODY PART: HAND AND ARM JOB TITLE: DISPATCHER		
Fracture, wrist:		
Physical examination—range of motion	Extension—limit to 30 degrees	D
Physical examination—range of motion	Flexion—limit to 30 degrees	D
Physical examination—range of motion	Ankylosis: >20 degrees from neutral	D
Rheumatoid arthritis hand:		
Physical examination	Significant deformity	D
Medical record review	Significant flare-ups, under treatment with rheumatologist.	D
Medical record review	Extensive medication use, under treatment with rheumatologist.	D
Thumb: permanent functional limitation:		
Adduction of thumb	Loss <=4 cm	D
Adduction of thumb	Loss <=7 cm	D
Ankylosis: degree from neutral	<20 degrees extension	D
Ankylosis: degree from neutral	<40 degrees flexion	D
Loss of extension or flexion	MCP or PIP: maximum flexion <40 degrees	D
Opposition	Loss <=4 cm	D
Opposition	Loss <=7 cm	D
Wrist: permanent functional limitation:		
Physical examination—range of motion	Extension—limit to 30 degrees	D
Physical examination—range of motion	Flexion—limit to 30 degrees	D
Physical examination—range of motion	Ankylosis: >20 degrees from neutral	D
BODY PART: HAND AND ARM JOB TITLE: CARMAN		
Carpal tunnel syndrome:		
Strength (jamar)	Dominant hand: <19 kg (female)	D
Strength (jamar)	Nondominant hand: <16 kg (female)	D
Strength (jamar)	Dominant hand: <34 kg (male)	D
Strength (jamar)	Nondominant hand: <34 kg (male)	D
Fracture, wrist:		
Strength (jamar)	Dominant hand: <19 kg (female)	D
Strength (jamar)	Nondominant hand: <16 kg (female)	D
Strength (jamar)	Dominant hand: <34 kg (male)	D
Strength (jamar)	Nondominant hand: <34 kg (male)	D
Physical examination—range of motion	Extension—limit to 30 degrees	D
Physical examination—range of motion	Flexion—limit to 30 degrees	D
Physical examination—range of motion	Ankylosis: >20 degrees from neutral	D
Hand: permanent functional limitation:		
Strength (jamar)	Dominant hand: <19 kg (female)	D
Strength (jamar)	Nondominant hand: <16 kg (female)	D
Strength (jamar)	Dominant hand: <34 kg (male)	D
Strength (jamar)	Nondominant hand: <34 kg (male)	D
Rheumatoid arthritis hand:		
Physical examination	Significant deformity	D
Medical record review	Significant flare-ups, under treatment with rheumatologist.	D
Medical record review	Extensive medication use, under treatment with rheumatologist.	D
Thumb: permanent functional limitation:		
Adduction of thumb:	Loss <=4 cm	D
Adduction of thumb:	Loss <=7 cm	D
Ankylosis: degree from neutral	<20 degrees extension	D
Ankylosis: degree from neutral	<40 degrees flexion	D
Loss of extension or flexion	MCP of PIP: maximum flexion <40 degrees	D
Opposition	Loss <=4 cm	D
Opposition	Loss <=7 cm	D
Wrist: permanent functional limitation:		
Strength (jamar)	Dominant hand: <19 kg (female)	D
Strength (jamar)	Nondominant hand: <16 kg (female)	D
Strength (jamar)	Dominant hand: <34 kg (male)	D
Strength (jamar)	Nondominant hand: <34 kg (male)	D
Physical examination—range of motion	Extension—limit to 30 degrees	D
Physical examination—range of motion	Flexion—limit to 30 degrees	D
Physical examination—range of motion	Ankylosis: >20 degrees from neutral	D

Disability test	Test result	Disability classification
BODY PART: HAND AND ARM JOB TITLE: SIGNALMAN		
Carpal tunnel syndrome:		
Strength (jamar)	Dominant hand: <19 kg (female)	D
Strength (jamar)	Nondominant hand: <16 kg (female)	D
Strength (jamar)	Dominant hand: <34 kg (male)	D
Strength (jamar)	Nondominant hand: <34 kg (male)	D
Fracture, wrist:		
Strength (jamar)	Dominant hand: <19 kg (female)	D
Strength (jamar)	Nondominant hand: <16 kg (female)	D
Strength (jamar)	Dominant hand: <34 kg (male)	D
Strength (jamar)	Nondominant hand: <34 kg (male)	D
Physical examination—range of motion	Extension—limit to 30 degrees	D
Physical examination—range of motion	Flexion—limit to 30 degrees	D
Physical examination—range of motion	Ankylosis: >20 degrees from neutral	D
Hand: permanent functional limitation:		
Strength (jamar)	Dominant hand: <19 kg (female)	D
Strength (jamar)	Nondominant hand: <16 kg (female)	D
Strength (jamar)	Dominant hand: <34 kg (male)	D
Strength (jamar)	Nondominant hand: <34 kg (male)	D
Rheumatoid arthritis hand:		
Physical examination	Significant deformity	D
Medical record review	Significant flare-ups, under treatment with rheumatologist.	D
Medical record review	Extensive medication use, under treatment with rheumatologist.	D
Thumb: permanent functional limitation:		
Adduction of thumb	Loss <=4 cm	D
Adduction of thumb	Loss <=7 cm	D
Ankylosis: degree from neutral	<20 degrees extension	D
Ankylosis: degree from neutral	<40 degrees flexion	D
Loss of extension or flexion	MCP or PIP: maximum flexion <40 degrees	D
Opposition	Loss <=4 cm	D
Opposition	Loss <=7 cm	D
Wrist: permanent functional limitation:		
Strength (jamar)	Dominant hand: <19 kg (female)	D
Strength (jamar)	Nondominant hand: <16 kg (female)	D
Strength (jamar)	Dominant hand: <34 kg (male)	D
Strength (jamar)	Nondominant hand: <34 kg (male)	D
Physical examination—range of motion	Extension—limit to 30 degrees	D
Physical examination—range of motion	Flexion—limit to 30 degrees	D
Physical examination—range of motion	Ankylosis: >20 degrees from neutral	D
BODY PART: HAND AND ARM JOB TITLE: TRACKMAN		
Carpal tunnel syndrome:		
Strength (jamar)	Dominant hand: <19 kg (female)	D
Strength (jamar)	Nondominant hand: <16 kg (female)	D
Strength (jamar)	Dominant hand: <34 kg (male)	D
Strength (jamar)	Nondominant hand: <34 kg (male)	D
Fracture, wrist:		
Strength (Jamar)	Dominant hand: <19 kg (female)	D
Strength (jamar)	Nondominant hand: <16 kg (female)	D
Strength (jamar)	Dominant hand: <34 kg (male)	D
Strength (jamar)	Nondominant hand: <34 kg (male)	D
Physical examination—range of motion	Extension—limit to 30 degrees	D
Physical examination—range of motion	Flexion—limit to 30 degrees	D
Physical examination—range of motion	Ankylosis: >20 degrees from neutral	D
Hand: permanent functional limitation:		
Strength (jamar)	Dominant hand: <19 kg (female)	D
Strength (jamar)	Nondominant hand: <16 kg (female)	D
Strength (jamar)	Dominant hand: <34 kg (male)	D
Strength (jamar)	Nondominant hand: <34 kg (male)	D
Rheumatoid arthritis hand:		
Physical examination	Significant deformity	D
Medical record review	Significant flare-ups, under treatment with rheumatologist.	D
Medical record review	Extensive medication use, under treatment with rheumatologist.	D
Thumb: permanent functional limitation:		
Adduction of thumb	Loss <=4 cm	D
Adduction of thumb	Loss <=7 cm	D

Disability test	Test result	Disability classification
Ankylosis: degree from neutral	<20 degrees extension	D
Ankylosis: degree from neutral	<40 degrees flexion	D
Loss of extension or flexion	MCP or PIP: maximum flexion <40 degrees	D
Opposition	Loss <=4 cm	D
Opposition	Loss <=7 cm	D
Wrist: permanent functional limitation:		
Strength (jamar)	Dominant hand: <19 kg (female)	D
Strength (jamar)	Nondominant hand: <16 kg (female)	D
Strength (jamar)	Dominant hand: <34 kg (male)	D
Strength (jamar)	Nondominant hand: <34 kg (male)	D
Physical examination—range of motion	Extension——limit to 30 degrees	D
Physical examination—range of motion	Flexion—limit to 30 degrees	D
Physical examination—range of motion	Ankylosis: >20 degrees from neutral	D
BODY PART: HAND AND ARM JOB TITLE: MACHINIST		
Carpal tunnel syndrome:		
Strength (jamar)	Dominant hand: <19 kg (female)	D
Strength (jamar)	Nondominant hand: <16 kg (female)	D
Strength (jamar)	Dominant hand: <34 kg (male)	D
Strength (jamar)	Nondominant hand <34 kg (male)	D
Fracture, wrist:		
Strength (jamar)	Dominant hand: <19 kg (female)	D
Strength (jamar)	Nondominant hand: <16 kg (female)	D
Strength (jamar)	Dominant hand: <34 kg (male)	D
Strength (jamar)	Nondominant hand <34 kg (male)	D
Physical examination—range of motion	Extension—limit to 30 degrees	D
Physical examination—range of motion	Flexion—limit to 30 degrees	D
Physical examination—range of motion	Ankylosis: >20 degrees from neutral	D
Hand: permanent functional limitation:		
Strength (jamar)	Dominant hand: <19 kg (female)	D
Strength (jamar)	Nondominant hand: <16 kg (female)	D
Strength (jamar)	Dominant hand: <34 kg (male)	D
Strength (jamar)	Nondominant hand <34 kg (male)	D
Rheumatoid arthritis hand:		
Physical examination	Significant deformity	D
Medical record review	Significant flare-ups, under treatent with rheumatologist	D
Medical record review	Extensive medication use, under treatment with rheumatologist.	D
Thumb: permanent functional limitation:		
Adduction of thumb	Loss <=4 cm	D
Adduction of thumb	Loss <=7 cm	D
Ankylosis: degree from neutral	<20 degrees flexion	D
Ankylosis: degree from neutral	<40 degrees extension	D
Loss of extension or flexion	MCP or PIP: maximum flexion <40 degrees	D
Opposition	Loss <=4 cm	D
Opposition	Loss <=7 cm	D
Wrist: permanent functional limitation:		
Strength (jamar)	Dominant hand: <19 kg (female)	D
Strength (jamar)	Nondominant hand: <16 kg (female)	D
Strength (jamar)	Dominant hand: <34 kg (male)	D
Strength (jamar)	Nondominant hand <34 kg (male)	D
Physical examination—range of motion	Extension—limit to 30 degrees	D
Physical examination—range of motion	Flexion—limit to 30 degrees	D
Physical examination—range of motion	Ankylosis: >20 degrees from neutral	D
BODY PART: HAND AND ARM JOB TITLE: SHOP LABORER		
Carpal tunnel syndrome:		
Strength (jamar)	Dominant hand: <19 kg (female)	D
Strength (jamar)	Nondominant hand: <16 kg (female)	D
Strength (jamar)	Dominant hand: <34 kg (male)	D
Strength (jamar)	Nondominant hand <34 kg (male)	D
Fracture, wrist:		
Strength (jamar)	Dominant hand: <19 kg (female)	D
Strength (jamar)	Nondominant hand: <16 kg (female)	D
Strength (jamar)	Dominant hand: <34 kg (male)	D
Strength (jamar)	Nondominant hand <34 kg (male)	D
Physical examination—range of motion	Extension—limit to 30 degrees	D
Physical examination—range of motion	Flexion—limit to 30 degrees	D
Physical examination—range of motion	Ankylosis: >20 degrees from neutral	D
Hand: permanent functional limitation:		

Disability test	Test result	Disability classification
Strength (jamar)	Dominant hand: <19 kg (female)	D
Strength (jamar)	Nondominant hand: <16 kg (female)	D
Strength (jamar)	Dominant hand: <34 kg (male)	D
Strength (jamar)	Nondominant hand: <34 kg (male)	D
Rheumatoid arthritis hand:		
Physical examination	Significant deformity	D
Medical record review	Significant flare-ups, under treatment with rheumatologist.	D
Medical record review	Extenive medication use, under treatment with rheumatologist.	D
Thumb: permanent functional limitation:		
Adduction of thumb	Loss <=4 cm	D
Adduction of thumb	Loss <=7 cm	D
Ankylosis: degree from neutral	<20 degrees extension	D
Ankylosis: degree from neutral	<40 degrees flexion	D
Loss of extension or flexion	MCP or PIP: maximum flexion <40 degrees	D
Opposition	Loss <=4 cm	D
Opposition	Loss <=7 cm	D
Wrist: permanent functional limitation:		
Strength (jamar)	Dominant hand: <19 kg (female)	D
Strength (jamar)	Nondominant hand: <16 kg (female)	D
Strength (jamar)	Nondominant hand: <34 kg (male)	D
Strength (jamar)	Nondominant hand: <34 kg (male)	D
Physical examination—range of motion	Extension—limit to 30 degrees	D
Physical examination—range of motion	Flexion—limit to 30 degrees	D
Physical examination—range of motion	Ankylosis: >20 degrees from neutral	D
BODY PART: HAND AND ARM JOB TITLE: SALES REPRESENTATIVE		
Fracture, wrist:		
Physical examination—range of motion	Extension—limit to 30 degrees	D
Physical examination—range of motion	Flexion—limit to 30 degrees	D
Physical examination—range of motion	Ankylosis: >20 degrees from neutral	D
Rheumatoid arthritis hand:		
Physical examination	Significant deformity	D
Medical record review	Significant flare-ups, under treatment with rheumatologist.	D
Medical record review	Extenive medication use, under treatment with rheumatologist.	D
Thumb: permanent functional limitation:		
Adduction of thumb	Loss <=4 cm	D
Adduction of thumb	Loss <=7 cm	D
Ankylosis: degree from neutral	<20 degrees extension	D
Ankylosis: degree from neutral	<40 degrees flexion	D
Loss of extension or flexion	MCP or PIP: maximum flexion <40 degrees	D
Opposition	Loss <=4 cm	D
Opposition:	Loss <=7 cm	D
Wrist: permanent functional limitation:		
Physical examination—range of motion	Extension—limit to 30 degrees	D
Physical examination—range of motion	Flexion—limit to 30 degrees	D
Physical examination—range of motion	Ankylosis: >20 degrees from neutral	D
BODY PART: HAND AND ARM JOB TITLE: GENERAL OFFICE CLERK		
Fracture, wrist:		
Physical examination—range of motion	Extension—limit to 30 degrees	D
Physical examination—range of motion	Flexion—limit to 30 degrees	D
Physical examination—range of motion	Ankylosis: >20 degrees from neutral	D
Rheumatoid arthritis hand:		
Physical examination	Significant deformity	D
Medical record review	Significant flare-ups, under treatment with rheumatologist.	D
Medical record review	Extensive medication use, under treatment with rheumatologist.	D
Thumb: permanent functional limitation:		
Adduction of thumb	Loss <=4 cm	D
Adduction of thumb	Loss <=7 cm	D
Ankylosis: degree from neutral	<20 degree extension	D
Ankylosis: degree from neutral	<40 degree flexion	D
Loss of extension or flexion	MCP or PIP: maximum flexion <40 degrees	D
Opposition	Loss <=4 cm	D
Opposition	Loss <=7 cm	D

Disability test	Test result	Disability classification
Wrist: permanent functional limitation:		
Physical examination—range of motion	Extension—limit to 30 degrees	D
Physical examination—range of motion	Flexion—limit to 30 degrees	D
Physical examination—range of motion	Ankylosis: >20 degrees from neutral	D

I. Hip

Confirmatory test	Minimum result	Requirements
BODY PART: HIP CONFIRMATORY TESTS		
Ankylosis, hip:		
X-ray: hip	Exteme joint destruction	Highly Recommended.
Physical examination—range of motion	No mobility	Highly Recommended.
Osteoarthritis, hip:		
X-ray: hip	<4 mm joint space, or other positive evidence	Recommended.
Magnetic resonance imaging	<4 mm joint space, or other positive evidence	Recommended.
Computerized axial tomography	<4 mm joint space, or other positive evidence	Recommended.
Osteomyelitis, hip:		
X-ray: hip	Evidence of chronic infection	Recommended.
Computerized axial tomography	Evidence of chronic infection	Recommended.
Paget's disease:		
X-ray: hip	Osteolytic and blastic lesions	Highly Recommended.
Alkaline phosphatase	Increased up to 50 times	Highly Recommended.
Hip replacement surgery:		
X-ray: hip	Evidence of artificial hip	Recommended.
Medical record review	Documentation of prior hip replacement	Recommended.

Disability test	Test result	Disability classification
BODY PART: HIP JOB TITLE: TRAINMAN		
Ankylosis, hip:		
Physical examination—range of motion	Ankylosis 5 degrees or > flexion	D
Physical examination—range of motion	Ankylosis internal rotation >5 degrees	D
Physical examination—range of motion	Ankylosis external rotation >10 degrees	D
Physical examination—range of motion	Ankylosis in abduction >5 degrees	D
Physical examination—range of motion	Ankylosis in adduction >5 degrees	D
Osteoarthritis, hip:		
X-ray: hip	0 mm cartilage interval	D
Physical examination—range of motion	30 degrees flexion contracture	D
Physical examination—range of motion	<50 degrees flexion	D
Physical examination—range of motion	<5 degrees abduction	D
Osteomyelitis, chronic hip:		
X-ray: hip	Significant joint destruction	D
Physical examination—range of motion	30 degrees flexion contracture	D
Physical examination—range of motion	<50 degrees flexion	D
Physical examination—range of motion	<5 degrees abduction	D
Medical record review	Documented occurrence of recurring infections with treatment.	D
Paget's disease:		
X-ray: hip	Significant joint destruction	D
Physical examination—range of motion	30 degrees flexion contracture	D
Physical examination—range of motion	<50 degrees flexion	D
Physical examination—range of motion	<5 degrees abduction	D
Hip replacement surgery:		
X-ray: hip	Evidence of artificial hip joint	D
Medical record review	Documentation of prior hip replacement	D
BODY PART: HIP JOB TITLE: ENGINEER		
Ankylosis, hip:		
Physical examination—range of motion	Ankylosis 5 degrees or > flexion	D
Physical examination—range of motion	Ankylosis internal rotation >5 degrees	D
Physical examination—range of motion	Ankylosis external rotation >10 degrees	D
Physical examination—range of motion	Ankylosis in abduction >5 degrees	D
Physical examination—range of motion	Ankylosis in adduction >5 degrees	D
Osteoarthritis, hip:		
X-ray: hip	0 mm cartilage interval	D
Physical examination—range of motion	30 degrees flexion contracture	D

Disability test	Test result	Disability classification
Physical examination—range of motion	<50 degrees flexion	D
Physical examination—range of motion	<5 degrees abduction	D
Osteomyelitis, chronic hip:		
X-ray: hip	Signficant joint destruction	D
Physical examination—range of motion	30 degrees flexion contracture	D
Physical examination—range of motion	<50 degrees flexion	D
Physical examination—range of motion	<5 degrees abduction	D
Medical record review	Documented occurrence of recurring infections with treatment.	D
Paget's disease:		
X-ray: hip	Significant joint destruction	D
Physical examination—range of motion	30 degrees flexion contracture	D
Physical examination—range of motion	<50 degrees flexion	D
Physical examination—range of motion	<5 degrees abduction	D
Hip replacement surgery:		
X-ray: hip	Evidence of artificial hip joint	D
Medical record review	Documentation of prior hip replacement	D
BODY PART: HIP JOB TITLE: CARMAN		
Ankylosis, hip:		
Physical examination—range of motion	Ankylosis 5 degrees or > flexion	D
Physical examination—range of motion	Ankylosis internal rotation >5 degrees	D
Physical examination—range of motion	Ankylosis external rotation >10 degrees	D
Physical examination—range of motion	Ankylosis in abduction >5 degrees	D
Physical examination—range of motion	Ankylosis in adduction >5 degrees	D
Osteoarthritis, hip:		
X-ray: hip	0 mm cartilage interval	D
Physical examination—range of motion	30 degrees flexion contracture	D
Physical examination—range of motion	<50 degrees flexion	D
Physical examination—range of motion	<5 degrees abduction	D
Osteomyelitis, chronic hip:		
X-ray: hip	Significant joint destruction	D
Physical examination—range of motion	30 degrees flexion contracture	D
Physical examination—range of motion	<50 degrees flexion	D
Physical examination—range of motion	<5 degrees abduction	D
Medical record review	Documented occurrence of recurring infections with treatment.	D
Paget's disease:		
X-ray: hip	Significant joint destruction	D
Physical examination—range of motion	30 degrees flexion contracture	D
Physical examination—range of motion	<50 degrees flexion	D
Physical examination—range of motion	<5 degrees abduction	D
Hip replacement surgery:		
X-ray: hip	Evidence of artificial hip joint	D
Medical record review	Documentation of prior hip replacement	D
BODY PART: HIP JOB TITLE: SIGNALMAN		
Ankylosis, hip:		
Physical examination—range of motion	Ankylosis 5 degrees or > flexion	D
Physical examination—range of motion	Ankylosis internal rotation >5 degrees	D
Physical examination—range of motion	Ankylosis external rotation >10 degrees	D
Physical examination—range of motion	Ankylosis in abduction >5 degrees	D
Physical examination—range of motion	Ankylosis in abduction >5 degrees	D
Osteoarthritis, hip:		
X-ray: hip	0 mm cartilage interval	D
Physical examination—range of motion	30 degrees flexion contracture	D
Physical examination—range of motion	<50 degrees flexion	D
Physical examination—range of motion	<5 degrees adduction	D
Osteomyelitis, chronic hip:		
X-ray: hip	Significant joint destruction	D
Physical examination—range of motion	30 degrees flexion contraction	D
Physical examination—range of motion	<50 degrees flexion	D
Physical examination—range of motion	<5 degrees abduction	D
Medical record review	Documented occurrence of recurring infections with treatment.	D
Paget's disease:		
X-ray: hip	Significant joint destruction	D
Physical examination—range of motion	30 degrees flexion contracture	D
Physical examination—range of motion	<50 degrees flexion	D
Physical examination—range of motion	<5 degrees abduction	D

Disability test	Test result	Disability classification
Hip replacement surgery:		
X-ray: hip	Evidence of artificial hip joint	D
Medical record review	Documentation of prior hip replacement	D
BODY PART: HIP JOB TITLE: TRACKMAN		
Ankylosis, hip:		
Physical examination—range of motion	Ankylosis 5 degrees or > flexion	D
Physical examination—range of motion	Ankylosis internal rotation >5 degrees	D
Physical examination—range of motion	Ankylosis internal rotation >10 degrees	D
Physical examination—range of motion	Ankylosis in abduction >5 degrees	D
Physical examination—range of motion	Ankylosis in adduction >5 degrees	D
Osteoarthritis, hip:		
X-ray: hip	0 mm cartilage interval	D
Physical examination—range of motion	30 degrees flexion contracture	D
Physical examination—range of motion	<50 degrees flexion	D
Physical examination—range of motion	<5 degrees abduction	D
Osteomyelitis, chronic hip:		
X-ray: hip	Significant joint destruction	D
Physical examination—range of motion	30 degrees flexion contracture	D
Physical examination—range of motion	<50 degrees flexion	D
Physical examination—range of motion	<5 degrees abduction	D
Medical record review	Documented occurrence of recurring infections with treatment.	D
Paget's disease:		
X-ray: hip	Significant joint destruction	D
Physical examination—range of motion	30 degrees flexion contracture	D
Physical examination—range of motion	<50 degrees flexion	D
Physical examination—range of motion	<5 degrees abduction	D
Hip replacement surgery:		
X-ray: hip	Evidence of artificial hip joint	D
Medical record review	Documentation of prior hip replacement	D
BODY PART: HIP JOB TITLE: MACHINIST		
Ankylosis, hip:		
Physical examination—range of motion	Ankylosis 5 degrees or > flexion	D
Physical examination—range of motion	Ankylosis internal rotation >5 degrees	D
Physical examination—range of motion	Ankylosis external rotation >10 degrees	D
Physical examination—range of motion	Ankylosis in abduction >5 degrees	D
Physical examination—range of motion	Ankylosis in adduction >5 degrees	D
Osteoarthritis, hip:		
X-ray: hip	0 mm cartilage interval	D
Physical examination—range of motion	30 degrees flexion contracture	D
Physical examination—range of motion	<50 degrees flexion	D
Physical examination—range of motion	<5 degrees abduction	D
Osteomyelitis, chronic hip:		
X-ray: hip	Significant joint destruction	D
Physical examination—range of motion	30 degrees flexion contracture	D
Physical examination—range of motion	<50 degrees flexion	D
Physical examination—range of motion	<5 degrees abduction	D
Medical record review	Documented occurrence of recurring infections with treatment.	D
Paget's disease:		
X-ray: hip	Significant joint destruction	D
Physical examination—range of motion	30 degrees flexion contracture	D
Physical examination—range of motion	<50 degrees flexion	D
Physical examination—range of motion	<5 degrees abudction	D
Hip replacement surgery:		
X-ray: hip	Evidence of artificial hip joint	D
Medical record review	Documentation of prior hip replacement	D
BODY PART: HIP JOB TITLE: SHOP LABORER		
Ankylosis, hip:		
Physical examination—range of motion	Ankylosis 5 degrees of > flexion	D
Physical examination—range of motion	Ankylosis internal rotation >5 degrees	D
Physical examination—range of motion	Ankylosis external rotation >10 degrees	D
Physical examination—range of motion	Ankylosis in abduction >5 degrees	D
Physical examination—range of motion	Ankylosis in adduction >5 degrees	D
Osteoarthritis, hip:		

Disability test	Test result	Disability classification
X-ray: hip	0 mm cartilage interval	D
Physical examination—range of motion	30 degrees flexion contracture	D
Physical examination—range of motion	<50 degrees flexion	D
Physical examination—range of motion	<5 degrees abduction	D
Osteomyelitis, chronic hip:		
X-ray: hip	Significant joint destruction	D
Physical examination—range of motion	30 degrees flexion contracture	D
Physical examination—range of motion	<50 degrees flexion	D
Physical examination—range of motion	<5 degrees abduction	D
Medical record review	Documented occurrence of recurring infections with treatment.	D
Paget's disease:		
X-ray; hip	Significant joint destruction	D
Physical examination—range of motion	30 degrees flexion contracture	D
Physical examination—range of motion	<50 degrees flexion	D
Physical examination—range of motion	<5 degrees abduction	D
Hip replacement surgery:		
X-ray: hip	Evidence of artificial hip joint	D
Medical record review	Documentation of prior hip replacement	D

J. Knee

Confirmatory test	Minimum result	Requirements
BODY PART: KNEE CONFURMATORY TESTS		
Arthritis: knee:		
X-ray: knee	Evidence of significant degenerative changes	Recommended.
Collateral ligament tear with laxity:		
Physical examination: knee	Evidence of ligamentous laxity	Highly Recommended.
Magnetic resonance imaging	Evidence of ligamentous tear	Recommended.
Cruciate and collateral ligament tear with laxity:		
Magnetic resonance imaging	Tear of both ligaments	Recommended.
Physical examination	Evidence of ligamentous laxity	Highly Recommended.
Medical record review	Documentation of tear by arthroscopy	Recommended.
Cruciate ligament tear with laxity:		
Physical examination: knee	Evidence of ligamentous laxity	Highly Recommended.
Magnetic resonance imaging	Evidence of cruciate tear	Recommended.
Medical record review	Documentation of tear by arthroscopy	Highly Recommended.
Intercondylar fracture:		
X-ray: knee	Evidence of fracture	Highly Recommended.
Osteomyelitis: knee:		
Medical record review	Documentated history of osteomyelitis requiring treatment.	Highly Recommended.
X-ray: knee	Evidence of chronic infection	Recommended.
Computerized tomography	Evidence of chronic infection	Recommended.
Magnetic resonance imaging	Evidence of chronic infection	Recommended.
Osteonecrosis:		
X-ray: knee	Necrosis of femoral condyle or tibial plateau	Recommended.
Computerized tomography	Necrosis of femoral condyle or tibial plateau	Recommended.
Magnetic resonance imaging	Necrosis of femoral condyle or tibial plateau	Recommended.
Patellofemoral arthritis:		
X-ray: knee	Evidence of arthritis	Recommended.
Magnetic resonance imaging	Evidence of arthritis	Recommended.
Physical examination	Crepitation with movement	Highly Recommended.
Patellar fracture nonunion with displacement:		
X-ray: knee	Nonunion and displacement	Recommended.
Magnetic resonance imaging	Nonunion and displacement	Recommended.
Computerized tomography	Nonunion and displacement	Recommended.
Plateau fracture:		
X-ray: knee	Evidence of fracture	Recommended.
Computerized tomography	Evidence of fracture	Recommended.
Magnetic resonance imaging	Evidence of fracture	Recommended.
Meniscectomy—medial or lateral:		
Medical record review	History of surgery	Highly Recommended.
Patellectomy:		
Physical examination: knee	Absent patellae	Highly Recommended.
Patellar—subluxation—recurrent:		
Medical record review	History of recurrent subluxation with associated signs	Highly Recommended.
Supracondylar fracture:		
X-ray: knee	Evidence of fracture	Recommended.
Magnetic resonance imaging	Evidence of fracture	Recommended.
Computerized tomography	Evidence of fracture	Recommended.

Confirmatory test	Minimum result	Requirements
Total knee replacement:		
X-ray: knee	Presence of replacement knee	Recommended.
Medical record review	Documented surgical history	Recommended.
Tibial shaft fracture:		
X-ray: leg	Fracture of shaft	Recommended.
Magnetic resonance imaging	Evidence of fracture	Recommended.
Computerized tomography	Evidence of fracture	Recommended.

Disability test	Test result	Disability classification
BODY PART: KNEE JOB TITLE: TRAINMAN		
Arthritis knee:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Physical examination	Valgus deformity, 16–20 degrees degrees	D
Physical examination	Varus deformity, 8–12 degrees degrees	D
X-ray knee	0–1 mm cartilage interval with degenerative change	D
Meniscectomy, medial or lateral:		
Physical examination—range of motion	Range of motion: flexion >60 degrees)	D
Physical examination—range of motion	Flexion contracture (20 or >degrees)	D
Collateral ligament tear with laxity:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Cruciate and collateral ligament tear:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Cruciate ligament tear with laxity:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Intercondylar fracture:		
Post fracture angulation	>20 degrees angulation	D
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Osteomyelitis, chronic knee:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Physical examination	Valgus deformity, 16–20 degrees	D
Physical examination	Valgus deformity, 8–12 degrees	D
Medical record review	Frequent episodes of infection requiring treatment	D
X-ray knee	0–1 mm cartilage interval with degenerative change	D
Osteonecrosis:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Physical examination	Valgus deformity, 16–20 degrees	D
Physical examination	Varus deformity, 8–12 degrees	D
X-ray knee	0–1 mm cartilage interval with degenerative change	D
Patellofemoral arthritis:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Physical examination	Valgus deformity, 16–20 degrees	D
Physical examination	Varus deformity, 8–12 degrees	D
X-ray knee: patello femoral joint	0 mm cartilage interval with degenerative change	D
Patellar fracture nonunion with displacement:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
X-ray knee	Nonunion and >3 mm displacement	D
Plateau fracture:		
Post fracture angulation	>20 degrees angulation	D
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Patellectomy:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Patellar, subluxation, recurrent:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Supracondylar fracture:		
Post fracture angulation	>20 degrees angulation	D
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Tibial shaft fracture:		

Disability test	Test result	Disability classification
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Post fracture angulation	>20 degrees malalignment	D
BODY PART: KNEE JOB TITLE: ENGINEER		
Arthritis knee:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees	D
Physical examination	Valgus deformity, 16–20 degrees	D
Physical examination	Varus deformity, 8–12 degrees	D
X-ray knee	0–1 mm cartilage interval with degenerative change	D
Meniscectomy, medial or lateral:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Collateral ligament tear with laxity:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Cruciate and collateral ligament tear:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Cruciate ligament tear with laxity:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Intercondylar fracture:		
Post fracture angulation	> 20 degrees angulation	D
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Osteomyelitis, chronic knee:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Physical examination	Valgus deformity, 16–20 degrees	D
Physical examination	Varus deformity, 8–12 degrees	D
Medical record review	Frequent episodes of infection requiring treatment	D
X-ray knee	0–1 mm cartilage interval with degenerative change	D
Osteonecrosis:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Physical examination	Valgus deformity, 16–20 degrees	D
Physical examination	Varus deformity, 8–12 degrees	D
X-ray knee	0–1 mm cartilage interval with degenerative change	D
Patellofemoral arthritis:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Physical examination	Valgus deformity, 16–20 degrees	D
Physical examination	Varus deformity, 8–12 degrees	D
X-ray knee: patello femoral joint	0 mm cartilage interval with degenerative change	D
Patellar fracture nonunion with displacement:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
X-ray knee	Nonunion and > 3 mm displacement	D
Plateau fracture:		
Post fracture angulation	> 20 degrees angulation	D
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Patellectomy:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Patellar, subluxation, recurrent:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Supracondylar fracture:		
Post fracture angulation	> 20 degrees angulation	D
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Tibial shaft fracture:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Post fracture angulation	> 20 degrees malalignment	D
BODY PART: KNEE JOB TITLE: CARMAN		
Arthritis knee:		

Disability test	Test result	Disability classification
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Physical examination	Valgus deformity, 16–20 degrees	D
Physical examination	Varus deformity, 8–12 degrees	D
X-ray knee	0–1 mm cartilage interval with degenerative change	D
Meniscectomy, medial or lateral:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Collateral ligament tear with laxity:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Cruciate and collateral ligament tear:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Cruciate ligament tear with laxity:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Intercondylar fracture:		
Post fracture angulation	> 20 degrees angulation	D
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Osteomyelitis, chronic knee:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Physical examination	Valgus deformity, 16–20 degrees	D
Physical examination	Varus deformity, 8–12 degrees	D
Medical record review	Frequent episodes of infection requiring treatment	D
X-ray knee	0–1 mm cartilage interval with degenerative change	D
Osteonecrosis:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Physical examination	Valgus deformity, 16–20 degrees	D
Physical examination	Varus deformity, 8–12 degrees	D
X-ray knee	0–1 mm cartilage interval with degenerative change	D
Patellofemoral arthritis:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Physical examination	Valgus deformity, 16–20 degrees	D
Physical examination	Varus deformity, 8–12 degrees	D
X-ray knee: patello femoral joint	0 mm cartilage interval with degenerative change	D
Patellar fracture nonunion with displacement:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
X-ray knee	Nonunion and > 3 mm displacement	D
Plateau fracture:		
Post fracture angulation	>20 degrees angulation	D
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Patellectomy:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Patellar, subluxation, recurrent:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Supracondylar fracture:		
Post fracture angulation	>20 degrees angulation	D
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Tibial shaft fracture:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Post fracture angulation	>20 degrees malalignment	D
BODY PART: KNEE JOB TITLE SIGNALMAN		
Arthritis knee:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Physical examination	Valgus deformity, 16–20 degrees	D
Physical examination	Valgus deformity, 8–12 degrees	D
X-ray knee	0–1 mm cartilage interval with degenerative change	D
Meniscectomy, medial or lateral:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D

Disability test	Test result	Disability classification
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Collateral ligament tear with laxity:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Cruciate and collateral ligament tear:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Cruciate ligament tear with laxity:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Intercondylar fracture:		
Post fracture angulation	>20 degrees angulation	D
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Osteomyelitis, chronic knee:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Physical examination	Valgus deformity, 16–20 degrees	D
Physical examination	Varus deformity, 8–12 degrees	D
Medical record review	Frequent episodes of infection requiring treatment	D
X-ray knee	0–1 mm cartilage interval with degenerative change	D
Osteonecrosis:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Physical examination	Valgus deformity, 16–20 degrees	D
Physical examination	Varus deformity, 8–12 degrees	D
X-ray knee	0–1 mm cartilage interval with degenerative change	D
Patellofemoral arthritis:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Physical examination	Valgus deformity, 16–20 degrees	D
Physical examination	Varus deformity, 8–12 degrees	D
X-ray knee: patello femoral joint	0 mm cartilage interval with degenerative change	D
Patellar fracture nonunion with displacement:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
X-ray knee	Nonunion and >3 mm displacement	D
Plateau fracture:		
Post fracture angulation	>20 degrees angulation	D
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Patellectomy:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Patellar, subluxation, recurrent:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Supracondylar fracture:		
Post fracture angulation	>20 degrees angulation	D
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Tibial shaft fracture:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Post fracture angulation	>20 degrees malalignment	D

BODY PART: KNEE
JOB TITLE: TRACKMAN

Arthritis knee:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Physical examination	Valgus deformity, 16–20 degrees	D
Physical examination	Varus deformity, 8–12 degrees	D
X-ray knee	0–1 mm cartilage interval with degenerative change	D
Meniscectomy, medial or lateral:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Collateral ligament tear with laxity:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Cruciate and collateral ligament tear:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D

Disability test	Test result	Disability classification
Cruciate ligament tear with laxity:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Intercondylar fracture:		
Post fracture angulation	>20 degree angulation	D
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Osteomyelitis, chronic knee:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Physical examination	Valgus deformity, 16–20 degrees	D
Physical examination	Varus deformity, 8–12 degrees	D
Medical record review	Frequent episodes of infection requiring treatment	D
X-ray knee	0–1 mm cartilage interval with degenerative change	D
Osteonecrosis:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Physical examination	Valgus deformity, 16–20 degrees	D
Physical examination	Varus deformity, 8–12 degrees	D
X-ray knee	0–1 mm cartilage interval with degenerative change	D
Patellofemoral arthritis:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Physical examination	Valgus deformity, 16–20 degrees	D
Physical examination	Varus deformity, 8–12 degrees	D
X-ray knee: patello femoral joint	0 mm cartilage interval with degenerative change	D
Patellar fracture nonunion with displacement:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
X-ray knee	Nonunion and > 3 mm displacement	D
Plateau fracture:		
Post fracture angulation	>20 degrees angulation	D
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Patellectomy:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Patellar, subluxation, recurrent:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Supracondylar fracture:		
Post fracture angulation	>20 degrees angulation	D
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Tibial shaft fracture:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Post fracture angulation	>20 degrees malalignment	D
BODY PART: KNEE JOB TITLE: MACHINIST		
Arthritis knee:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Physical examination	Valgus deformity, 16–20 degrees	D
Physical examination	Varus deformity, 8–12 degrees	D
X-ray knee	0–1 mm cartilage interval with degenerative change	D
Meniscectomy, medial or lateral:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Collateral ligament tear with laxity:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Cruciate and collateral ligament tear:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Cruciate ligament tear with laxity:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Intercondylar fracture:		
Post fracture angulation	>20 degrees angulation	D
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D

Disability test	Test result	Disability classification
Osteomyelitis, chronic knee:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Physical examination	Valgus deformity, 16–20 degrees	D
Physical examination	Varus deformity, 8–12 degrees	D
Medical record review	Frequent episodes of infection requiring treatment	D
X-ray knee	0–1 mm cartilage interval with degenerative change	D
Osteonecrosis:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Physical examination	Valgus deformity, 16–20 degrees	D
Physical examination	Varus deformity, 8–12 degrees	D
X-ray knee	0–1 mm cartilage interval with degenerative change	D
Patellofemoral arthritis:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Physical examination	Valgus deformity, 16–20 degrees	D
Physical examination	Varus deformity, 8–12 degrees	D
X-ray knee	0 mm cartilage interval with degenerative change	D
Patellar fracture nonunion with displacement:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
X-ray knee	Nonunion and >3 mm displacement	D
Plateau fracture:		
Post fracture angulation	>20 degrees angulation	D
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Patellectomy:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Patellar, subluxation, recurrent:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Supracondylar fracture:		
Post fracture angulation	>20 degrees angulation	D
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Tibial shaft fracture:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Post fracture angulation	>20 degrees malalignment	D

BODY PART: KNEE
JOB TITLE: SHOP LABORER

Arthritis knee:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Physical examination	Valgus deformity, 16–20 degrees	D
Physical examination	Varus deformity, 8–12 degrees	D
X-ray knee	0–1 mm cartilage interval with degenerative change	D
Meniscectomy, medial or lateral:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Collateral ligament tear with laxity:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Cruciate and collateral ligament tear:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Cruciate ligament tear with laxity:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Intercondylar fracture:		
Post fracture angulation	>20 degrees angulation	D
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Osteomyelitis, chronic knee:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Physical examination	Valgus deformity, 16–20 degrees	D
Physical examination	Varus deformity, 8–12 degrees	D
Medical record review	Frequent episodes of infection requiring treatment	D
X-ray knee	0–1 mm cartilage interval with degenerative change	D

Disability test	Test result	Disability classification
Osteonecrosis:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Physical examination	Valgus deformity, 16–20 degrees	D
Physical examination	Varus deformity, 8–12 degrees	D
X-ray knee	0–1 mm cartilage interval with degenerative change	D
Patellofemoral arthritis:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Physical examination	Valgus deformity, 16–20 degrees	D
Physical examination	Varus deformity, 8–12 degrees	D
X-ray knee: patellofemoral joint	0 mm cartilage interval with degenerative change	D
Patellar fracture nonunion with displacement:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
X-ray knee	Nonunion and > 3 mm displacement	D
Plateau fracture::		
Post fracture angulation	>20 degrees angulation	D
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Patellectomy:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Patellar, subluxation, recurrent:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Supracondylar fracture:		
Post fracture angulation	>20 degrees angulation	D
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Tibial shaft fracture:		
Physical examination—range of motion	Range of motion: flexion <60 degrees	D
Physical examination—range of motion	Flexion contracture (20 or > degrees)	D
Post fracture angulation	>20 degrees malalignment	D

K. Ankle and Foot

Confirmatory test	Minimum result	Requirements
BODY PART: ANKLE AND FOOT CONFIRMATORY TESTS		
Ankle fracture:		
Medical record review	Documented history of ankle fracture	Recommended.
X-ray: ankle	Ankle fracture	Highly recommended.
Ankylosis, ankle:		
X-ray: ankle	Extensive joint destruction	Highly recommended.
Physical examination	No mobility	Highly recommended.
Arthritis, subtalar joint:		
X-ray: ankle	Evidence of significant arthritis: subtalar joint	Highly recommended.
Arthritis, talonavicular joint:		
X-ray: ankle	Significant arthritis: talonavicular joint	Highly recommended.
Achilles tendon rupture:		
Medical record review	Documentation of achilles tendon rupture	Highly recommended.
Physical examination	Rupture of achilles tendon	Highly recommended.
Arthritis, ankle:		
X-ray: ankle	Significant arthritis	Highly recommended.
Hindfoot fracture:		
X-ray: foot and ankle	Documentatin of fracture	Highly recommended.
Rheumatoid arthritis, foot:		
Medical History	Documented history of condition	Highly recommended.
X-ray: foot	Significant arthritis	Highly recommended.

Disability test	Test result	Disability classification
BODY PART: ANKLE AND FOOT JOB TITLE: TRAINMAN		
Ankle fracture:		
X-ray: ankle	Displaced intra-articular fracture	D
Physical examination	Varus deformity >15 degrees	D
Physical examination—range of motion	Plantar flexion capability—<5 degrees	D
Physical examination—range of motion	Plantar flexion contracture—20 degrees	D

Disability test	Test result	Disability classification
Ankylosis, ankle:		
Physical examination—range of motion	Ankylosis in 20 degree or > dorsiflexion	D
Physical examination—range of motion	Ankylosis in 20 degree plantar flexion	D
Physical examination—range of motion	Ankylosis in int or ext malrotation >15 degrees	D
Physical examination—range of motion	Ankylosis in varus 10 or more degrees	D
Physical examination—range of motion	Ankylosis in valgus 10 or more degrees	D
Arthritis, subtalar joint (hindfoot):		
X-ray: ankle—subtalar joint	Subtalar joint space 0 mm	D
Physical examination—range of motion	Plantar flexion capability—<5 degrees	D
Physical examination—range of motion	Plantar flexion contracture—20 degrees	D
Physical examination	Varus deformity >15 degrees	D
Arthritis, talonavicular joint (hindfoot):		
Physical examination—range of motion	Plantar flexion capability—<5 degrees	D
Physical examination—range of motion	Plantar flexion contracture—20 degrees	D
X-ray: ankle—talonavicular joint	Talonavicular joint space 0 mm	D
Physical examination	Varus deformity >15 degrees	D
Achilles tendon rupture:		
Physical examination—range of motion	Plantar flexion capability, <5 degrees	D
Physical examination—range of motion	Plantar flexion contracture, 20 degrees	D
Physical examination—range of motion	Plantar flexion contracture, 20 degrees	D
Arthritis, ankle:		
X-ray: ankle	0 mm	D
Physical examination—range of motion	Plantar flexion capability, <5 degrees	D
Physical examination—range of motion	Plantar flexion constructure, 20 degrees	D
Physical examination	Varus deformity >15 degrees	D
Hindfoot fracture:		
X-ray: foot	Calcaneal fracture with Boehler angle <95 degrees	D
X-ray: foot	Subtalar fracture with Boehler angle <95 degrees	D
Physical examination	Varus angulation >20 degrees (hindfoot)	D
Physical examination	Valgus angulation >20 degrees (hindfoot)	D
Rheumatoid arthritis, foot:		
X-ray: foot	Significant degeneration	D
Medical record review	Frequent flare-up with treatment	D

BODY PART: ANKLE AND FOOT
JOB TITLE: ENGINEER

Ankle fracture:		
X-ray: ankle	Displaced intra-articular fracture	D
Physical examination	Varus deformity >15 degrees	D
Physical examination—range of motion	Plantar flexion capability—<5 degrees	D
Physical examination—range of motion	Plantar flexion contracture—20 degrees	D
Ankylosis, ankle:		
Physical examination—range of motion	Ankylosis in 20 degree or > dorsiflexion	D
Physical examination—range of motion	Ankylosis in 20 degree plantar flexion	D
Physical examination—range of motion	Ankylosis in int or ext malrotation >15 degrees	D
Physical examination—range of motion	Ankylosis in varus 10 or more degrees	D
Physical examination—range of motion	Ankylosis in valgus 10 or more degrees	D
Arthritis, subtalar joint (hindfoot):		
X-ray: ankle—subtalar joint	Subtalar joint space 0 mm	D
Physical examination—range of motion	Plantar flexion capability—<5 degrees	D
Physical examination—range of motion	Plantar flexion contracture—20 degrees	D
Physical examination	Varus deformity >15 degrees	D
Arthritis, talonavicular joint (hindfoot):		
Physical examination—range of motion	Plantar flexion capability—<5 degrees	D
Physical examination—range of motion	Plantar flexion contracture—20 degrees	D
X-ray ankle—talonavicular joint	Talonavicular joint space 0 mm	D
Physical examination	Varus deformity >15 degrees	D
Achilles tendon rupture:		
Physical examination—range of motion	Plantar flexion capability—<5 degrees	D
Physical examination—range of motion	Plantar flexion contracture 20 degrees	D
Physical examination—range of motion	Plantar flexion contracture, 20 degrees	D
Arthritis, ankle:		
X-ray: ankle	0 mm	D
Physical examination—range of motion	Plantar flexion capability— <5 degrees	D
Physical examination—range of motion	Plantar flexion contracture—20 degrees	D
Physical examination	Varus deformity >15 degrees	D
Hindfoot fracture:		
X-ray: foot	Calcaneal fracture with Boehler angle <95 degrees	D
X-ray: foot	Subtalar fracture with Boehler angle <95 degrees	D
Physical examination	Varus angulation >20 degrees (hindfoot)	D
Physical examination	Valgus angulation >20 degrees (hindfoot)	D
Rheumatoid arthritis, foot:		
X-ray: foot	Significant degeneration	D

Disability test	Test result	Disability classification
Medical record review	Frequent flare-up with treatment	D
BODY PART: ANKLE AND FOOT JOB TITLE: DISPATCHER		
Achilles tendon rupture:		
Physical examination—range of motion	Plantar flexion capability—<5 degrees	D
Physical examination—range of motion	Plantar flexion contracture, 20 degrees	D
Physical examination—range of motion	Plantar flexion contracture, 20 degrees	D
Arthritis, ankle:		
X-ray: ankle	0 mm	D
Physical examination—range of motion	Plantar flexion capability—<5 degrees	D
Physical examination—range of motion	Plantar flexion contracture—20 degrees	D
Physical examination	Varus deformity >15 degrees	D
Hindfoot fracture:		
X-ray: foot	Calcaneal fracture with Boehler angle <95 degrees	D
X-ray: foot	Subtalar fracture with Boehler angle <95 degrees	D
Physical examination	Varus angulation >20 degrees (hindfoot)	D
Physical examination	Valgus angulation >20 degrees (hindfoot)	D
Rheumatoid arthritis, foot:		
X-ray: foot	Significant degeneration	D
Medical record review	Frequent flare-up with treatment	D
BODY PART: ANKLE AND FOOT JOB TITLE: CARMAN		
Ankle fracture:		
X-ray: ankle	Displaced intra-articular fracture	D
Physical examination	Varus deformity >15 degrees	D
Physical examination—range of motion	Plantar flexion capability—<5 degrees	D
Physical examination—range of motion	Plantar flexion contracture—20 degrees	D
Ankylosis, ankle:		
Physical examination—range of motion	Ankylosis in 20 degree or > dorisiflexion	D
Physical examination—range of motion	Ankylosis in 20 degree plantar flexion	D
Physical examination—range of motion	Ankylois in int or ext malrotation >15 degrees	D
Physical examination—range of motion	Ankylosis in varus 10 or more degrees	D
Physical examination—range of motion	Ankylosis in valgus 10 or more degrees	D
Arthritis, subtalar joint (hindfoot):		
X-ray: ankle—subtalar joint	Subtalar joint space 0 mm	D
Physical examination—range of motion	Plantar flexion capability—<5 degrees	D
Physical examination—range of motion	Plantar flexion contracture—20 degrees	D
Physical examination	Varus deformity >15 degrees	D
Arthritis, talonavicular joint (hindfoot):		
Physical examination—range of motion	Plantar flexion capability—<5 degrees	D
Physical examination—range of motion	Plantar flexion contracture—20 degrees	D
X-ray: ankle—talonavicular joint	Talonavicular joint space 0 mm	0
Physical examination	Varus deformity >15 degrees	D
Achilles tendon rupture:		
Physical examination—range of motion	Plantar flexion capability—<5 degrees	D
Physical examination—range of motion	Plantar flexion contracture, 20 degrees	D
Physical examination—range of motion	Plantar flexion contracture, 20 degrees	D
Arthritis, ankle:		
X-ray: ankle	0 mm	D
Physical examination—range of motion	Plantar flexion capability—<5 degrees	D
Physical examination—range of motion	Plantar flexion contracture, 20 degrees	D
Physical examination	Varus deformity >15 degrees	D
Hindfoot fracture:		
X-ray: foot	Calcaneal fracture with Boehler angle <95 degrees	D
X-ray: foot	Subtalar fracture with Boehler angle >95 degrees	D
Physical examination	Varus angulation >20 degrees (hindfoot)	D
Physical examination	Valgus angulation >20 degrees (hindfoot)	D
Rheumatoid arthritis, foot:		
X-ray: foot	Significant degeneration	D
Medical record review	Frequent flare—up with treatment	D
BODY PART: ANKLE AND FOOT JOB TITLE: SIGNALMAN		
Ankle fracture:		
X-ray: ankle	Displaced intra-articular fracture	D
Physical examination	Varus deformity >15 degrees	D
Physical examination—range of motion	Plantar flexion capability—<5 degrees	D
Physical examination—range of motion	Plantar flexion contracture—20 degrees	D
Ankylosis, ankle:		

Disability test	Test result	Disability classification
Physical examination—range of motion	Ankylosis in 20 degree or > dorsiflexion	D
Physical examination—range of motion	Ankylosis in 20 degree plantar flexion	D
Physical examination—range of motion	Ankylosis in int or ext malrotation >15 degrees	D
Physical examination—range of motion	Ankylosis in varus 10 or more degrees	D
Physical examination—range of motion	Ankylosis in valgus 10 or more degrees	D
Arthritis, subtalar joint (hindfoot):		
X-ray: ankle—subtalar joint	Subtalar joint space 0 mm	D
Physical examination—range of motion	Plantar flexion capability—<5 degrees	D
Physical examination—range of motion	Plantar flexion contracture—20 degrees	D
Physical examination	Varus deformity >15 degrees	D
Arthritis, talonavicular joint (hindfoot):		
Physical examination—range of motion	Plantar flexion capability—<5 degrees	D
Physical examination—range of motion	Plantar flexion contracture—20 degrees	D
X-ray: ankle—talonavicular joint	Talonavicular joint space 0 mm	D
Physical examination	Varus deformity >15 degrees	D
Achilles tendon rupture:		
Physical examination—range of motion	Plantar flexion capability—<5 degrees	D
Physical examination—range of motion	Plantar flexion contracture, 20 degrees	D
Physical examination—range of motion	Plantar flexion contracture, 20 degrees	D
Arthritis, ankle:		
X-ray: ankle	0 mm	D
Physical examination—range of motion	Plantar flexion capability—<5 degrees	D
Physical examination—range of motion	Plantar flexion contracture—20 degrees	D
Physical examination	Varus deformity >15 degrees	D
Hindfoot fracture:		
X-ray: foot	Calcaneal fracture with Boehler angle <95 degrees	D
X-ray: foot	Subtalar fracture with Boehler angle <95 degrees	D
Physical examination	Varus angulation >20 degrees (hindfoot)	D
Physical examination	Valgus angulation >20 degrees (hindfoot)	D
Rheumatoid arthritis, foot:		
X-ray: foot	Significant degeneration	D
Medical record review	Frequent flare-up with treatment	D

BODY PART: ANKLE AND FOOT
JOB TITLE: TRACKMAN

Ankle fracture:		
X-ray: ankle	Displaced intra-articular fracture	D
Physical examination—range of motion	Varus deformity >15 degrees	D
Physical examinaton—range of motion	Plantar flexion capability—<5 degrees	D
Physical examination—range of motion	Plantar flexion contracture—20 degrees	D
Ankylosis, ankle:		
Physical examination—range of motion	Ankylosis in 20 degree or > dorsiflexion	D
Physical examination—range of motion	Ankylosis in 20 degree plantar flexion	D
Physical examination—range of motion	Ankylosis in int or ext malrotation >15 degrees	D
Physical examination—range of motion	Ankylosis in varus 10 or more degrees	D
Physical examination—range of motion	Ankylosis in valgus 10 or more degrees	D
Arthritis, subtalar joint (hindfoot):		
X-ray: ankle—subtalar joint	Subtalar joint space 0 mm	D
Physical examination—range of motion	Plantar flexion capability—<5 degrees	D
Physical examination—range of motion	Plantar flexion contracture—20 degrees	D
Physical examination	Varus deformity >15 degrees	D
Arthritis, talonavicular joint (hindfoot):		
Physical examination—range of motion	Plantar flexion capability—<5 degrees	D
Physical examination—range of motion	Plantar flexion contracture—20 degrees	D
X-ray: angle—talonavicular joint	Talonavicular joint space 0 mm	D
Physical examination	Varus deformity >15 degrees	D
Achilles tendon rupture:		
Physical examination—range of motion	Plantar flexion capability—<5 degrees	D
Physical examination—range of motion	Plantar flexion contracture, 20 degrees	D
Physical examination—range of motion	Plantar flexion contracture, 20 degrees	D
Arthritis, ankle:		
X-ray: ankle	0 mm	D
Physical examination—range of motion	Plantar flexion capability—<5 degrees	D
Physical examination	Varus deformity >15 degrees	D
Hindfoot fracture:		
X-ray: foot	Calcaneal fracture with Boehler angle <95 degrees	D
X-ray: foot	Subtalar fracture with Boehler angle <95 degrees	D
Physical examination	Varus angulation >20 degrees (hindfoot)	D
Physical examination	Valgus angulation >20 degrees (hindfoot)	D
Rheumatoid arthritis, foot:		
X-ray: foot	Significant degeneration	D
Medical record review	Frequent flare-up with treatment	D

Disability test	Test result	Disability classification
BODY PART: ANKLE AND FOOT JOB TITLE: MACHINIST		
Ankle fracture:		
X-ray: ankle	Displaced intra-articular fracture	D
Physical examination	Varus deformity >15 degrees	D
Physical examination—range of motion	Plantar flexion capability—<5 degrees	D
Physical examination—range of motion	Plantar flexion contracture—20 degrees	D
Ankylosis, ankle:		
Physical examination—range of motion	Ankylosis in 20 degree or > dorsiflexion	D
Physical examination—range of motion	Ankylosis in 20 degree plantar flexion	D
Physical examination—range of motion	Ankylosis in int or ext malrotation >15 degrees	D
Physical examination—range of motion	Ankylosis in varus 10 or more degrees	D
Physical examination—range of motion	Ankylosis in valgus 10 or more degrees	D
Arthritis, subtalar joint (hindfoot):		
X-ray: ankle—subtalar joint	Subtalar joint space 0 mm	D
Physical examination—range of motion	Plantar flexion capability—>5 degrees	D
Physical examination—range of motion	Plantar flexion contracture—20 degrees	D
Physical examination	Varus deformity<15 degrees	D
Arthritis, talonavicular joint (hindfoot):		
Physical examination—range of motion	Plantar flexion capability—<5 degrees	D
Physical examination—range of motion	Plantar flexion contracture—20 degrees	D
X-ray: ankle—talonavicular joint	Talonavicular joint space 0 mm	D
Physical examination	Varus deformity >15 degrees	D
Achilles tendon rupture:		
Physical examination—range of motion	Plantar flexion capability—<5 degrees	D
Physical examination—range of motion	Plantar flexion contracture, 20 degrees	D
Physical examination—range of motion	Plantar flexion contracture, 20 degrees	D
Arthritis, ankle:		
X-ray: ankle	0 mm	D
Physical examination—range of motion	Plantar flexion capability—<5 degrees	D
Physical examination—range of motion	Plantar flexion contracture—20 degrees	D
Physical examination	Varus deformity >15 degrees	D
Hindfoot fracture:		
X-ray: foot	Calcaneal fracture with Boehler angle <95 degrees	D
X-ray: foot	Subtalar fracture with Boehler angle <95 degrees	D
Physical examination	Varus angulation >20 degrees (hindfoot)	D
Physical examination	Valgus angulation >20 degrees (hindfoot)	D
Rheumatoid arthritis, foot:		
X-ray: foot	Significant degeneration	D
Medical record review	Frequent flare-up with treatment	D
BODY PART: ANKLE AND FOOT JOB TITLE: LABORER		
Ankle fracture:		
X-ray: ankle	Displaced intra-articular fracture	D
Physical examination	Varus deformity >15 degrees	D
Physical examination—range of motion	Plantar flexion capability—<5 degrees	D
Physical examination—range of motion	Plantar flexion contracture—20 degrees	D
Ankylosis, ankle:		
Physical examination—range of motion	Ankylosis in 20 degree or > dorsiflexion	D
Physical examination—range of motion	Ankylosis in 20 degree plantar flexion	D
Physical examination—range of motion	Ankylosis in int or ext malrotation >15 degrees	D
Physical examination—range of motion	Ankylosis in varus 10 or more degrees	D
Physical examination—range of motion	Ankylosis in valgus 10 or more degrees	D
Arthritis, subtalar joint (hindfoot):		
X-ray: ankle—subtalar joint	Subtalar joint space 0 mm	D
Physical examination—range of motion	Plantar flexion capability—<5 degrees	D
Physical examination—range of motion	Plantar flexion contracture—20 degrees	D
Physical examination	Varus deformity >15 degrees	D
Arthritis, talonavicular joint (hindfoot):		
Physical examination—range of motion	Plantar flexion capability—<5 degrees	D
Physical examination—range of motion	Plantar flexion contracture—20 degrees	D
X-ray: ankle—talonavicular joint	Talonavicular joint space 0 mm	D
Physical examination	Varus deformity >15 degrees	D
Achilles tendon rupture:		
Physical examination—range of motion	Plantar flexion capability—<5 degrees	D
Physical examination—range of motion	Plantar flexion contracture, 20 degrees	D
Physical examination—range of motion	Plantar flexion contracture, 20 degrees	D
Arthritis, ankle:		
X-ray: ankle	0 mm	D
Physical examination—range of motion	Plantar flexion capability—<5 degrees	D
Physical examination—range of motion	Plantar flexion contracture—20 degrees	D

Disability test	Test result	Disability classification
Physical examination	Varus deformity >15 degrees	D
Hindfoot fracture:		
X-ray: foot	Calcaneal fracture with Boehler angle <95 degrees	D
X-ray: foot	Subtalar fracture with Boehler angle <95 degrees	D
Physical examination	Varus angulation >20 degrees (hindfoot)	D
Physical examination	Valgus angulation >20 degrees (hindfoot)	D
Rheumatoid arthritis, foot:		
X-ray: foot	Significant degeneration	D
Medical record review	Frequent flare-up with treatment	D
BODY PART: ANKLE AND FOOT JOB TITLE: SALES REPRESENTATIVES		
Achilles tendon rupture:		
Physical examination—range of motion	Plantar flexion capability—<5 degrees	D
Physical examination—range of motion	Plantar flexion contracture, 20 degrees	D
Physical examination—range of motion	Plantar flexion contracture, 20 degrees	D
Arthritis, ankle:		
X-ray: ankle	0 mm	D
Physical examination—range of motion	Plantar flexion capability—<5 degrees	D
Physical examination—range of motion	Plantar flexion contracture—20 degrees	D
Physical examination	Varus deformity >15 degrees	D
Hindfoot fracture:		
X-ray: foot	Calcaneal fracture with Boehler angle <95 degrees	D
X-ray: foot	Subtalar fracture with Boehler angle <95 degrees	D
Physical examination	Varus angulation >20 degrees (hindfoot)	D
Physical examination	Valgus angulation >20 degrees (hindfoot)	D
Rheumatoid arthritis, foot:		
X-ray: foot	Significant degeneration	D
Medical record review	Frequent flare-up with treatment	D

Dated: September 12, 1997.

By Authority of the Board.

Beatrice Ezerski,

Secretary to the Board.

[FR Doc. 95–24793 Filed 8–23–95; 8:45 am]

BILLING CODE 7905–01–M

Federal Register

Wednesday
September 24, 1997

Part III

Department of Energy

Office of Energy Efficiency and Renewable Energy

10 CFR Part 430

Energy Conservation Program for Consumer Products; Conservation Standards for Room Air Conditioners; Final Rule

DEPARTMENT OF ENERGY

Office of Energy Efficiency and Renewable Energy

10 CFR Part 430

[Docket Numbers EE–RM–90–201 and EE–RM–93–801–RAC]

RIN 1904–AA38

Energy Conservation Program for Consumer Products: Final Rule Regarding Energy Conservation Standards for Room Air Conditioners

AGENCY: Office of Energy Efficiency and Renewable Energy, Department of Energy (DOE).

ACTION: Final Rule.

SUMMARY: The Department of Energy (DOE or Department) has determined that revised energy conservation standards for room air conditioners will result in a significant conservation of energy, are technologically feasible, and are economically justified. On this basis, the Department is today amending the existing energy conservation standards for room air conditioners. The Department projects the standards to save 0.64 quad of energy through 2030, which is likely to result in a cumulative reduction of emissions of approximately 95,000 tons of nitrogen dioxide and 54 million tons of carbon dioxide.

EFFECTIVE DATE: The effective date of the standards is October 1, 2000.

ADDRESSES: A copy of the Technical Support Document (TSD) for this product may be read at the DOE Freedom of Information Reading Room, U.S. Department of Energy, Forrestal Building, Room 1E–190, 1000 Independence Avenue, SW., Washington, DC 20585, (202) 586–3142, between the hours of 9:00 a.m. and 4:00 p.m., Monday through Friday, except Federal holidays. Copies of the TSD may be obtained from: U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Forrestal Building, Mail Station EE–43, 1000 Independence Avenue, SW., Washington, DC 20585. (202) 586–9127.

FOR FURTHER INFORMATION CONTACT:

Kathi Epping, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Forrestal Building, Mail Station EE–43, 1000 Independence Avenue, SW., Washington, DC 20585, (202) 586–7425

Eugene Margolis, Esq., U.S. Department of Energy, Office of General Counsel, Forrestal Building, Mail Station GC–72, 1000 Independence Avenue, SW., Washington, D.C. 20585, (202) 586–9507.

SUPPLEMENTARY INFORMATION:

I. Introduction

a. Authority

Part B of Title III of the Energy Policy and Conservation Act, Pub. L. 94–163, as amended by the National Energy Conservation Policy Act (NECPA), Pub. L. 95–619, the National Appliance Energy Conservation Act (NAECA), Pub. L. 100–12, the National Appliance Energy Conservation Amendments of 1988 (NAECA 1988), Pub. L. 100–357, and the Energy Policy Act of 1992 (EPAct), Pub. L. 102–486,[1] created the Energy Conservation Program for Consumer Products other than Automobiles. The consumer products subject to this program are called ''covered products.'' The covered products specified by statute include room air conditioners. EPCA, section 322, 42 U.S.C. 6292.

For room air conditioners, EPCA prescribes an initial Federal energy conservation standard effective in 1990 and specifies that the Department shall publish a final rule no later than January 1, 1992, to determine if the 1990 standards should be amended. A second review must be completed within five years after publication of this final rule. EPCA, section 325(c), 42 U.S.C. 6295(c). Any new or amended standard is required to be designed so as to achieve the maximum improvement in energy efficiency that is technologically feasible and economically justified. EPCA, 325(o)(2)(A), 42 U.S.C. 6295(o)(2)(A). The Secretary may not prescribe any amended standard which increases the maximum allowable energy use or decreases the minimum required energy efficiency of a covered product. EPCA, section 325(o)(1), 42 U.S.C. 6295(o)(1).

Section 325(o)(2)(B) provides that DOE, in determining whether a standard is economically justified, must determine whether the benefits of the standard exceed its burdens, based, to the greatest extent practicable, on a weighing of the following seven factors:

(1) The economic impact of the standard on the manufacturers and on the consumers of the products subject to such standard;

(2) The savings in operating costs throughout the estimated average life of the covered product in the type (or class) compared to any increase in the price of, in the initial charges for, or maintenance expenses of, the covered products which are likely to result from the imposition of the standard;

(3) The total projected amount of energy savings likely to result directly from the imposition of the standard;

(4) Any lessening of the utility or the performance of the covered products likely to result from the imposition of the standard;

(5) The impact of any lessening of competition, as determined in writing by the Attorney General, that is likely to result from the imposition of the standard;

(6) The need for national energy conservation; and

(7) Other factors the Secretary considers relevant.

In addition, section 325(o)(2)(B)(iii) establishes a rebuttable presumption of economic justification in instances where the Secretary determines that

[1] The Energy Policy and Conservation Act, as amended by the National Energy Conservation Policy Act, the National Appliance Energy Conservation Act, the National Appliance Energy Conservation Amendments of 1988, and the Energy Policy Act of 1992, is referred to in this notice as the ''EPCA.'' Part B of Title III is codified at 42 U.S.C. 6291 *et seq.*

''the additional cost to the consumer of purchasing a product complying with an energy conservation standard level will be less than three times the value of the energy savings during the first year that the consumer will receive as a result of the standard, as calculated under the applicable test procedure.''

b. Background

The purpose of this rulemaking is to review the energy conservation standards for room air conditioners. In 1990, DOE published an advance notice of proposed rulemaking with regard to standards for nine covered products, including room air conditioners. 55 FR 39624 (September 28, 1990) (hereinafter referred to as the September 1990 advance notice). The September 1990 advance notice presented the product classes that DOE planned to analyze and provided a detailed discussion of the analytical methodology and models that the Department expected to use.

On March 4, 1994, DOE published a notice of proposed rulemaking (NOPR) concerning eight products, including room air conditioners. 59 FR 10464 (March 4, 1994) (hereinafter referred to as the Proposed Rule). The standards the Department proposed for room air conditioners are shown in the following table:

TABLE 1–1.—PROPOSED STANDARDS LEVELS FOR ROOM AIR CONDITIONERS

Product class	Energy efficiency ratio	
	Current standards (effective January 1, 1990)	Standards proposed in 1994 Proposed Rule
1. Without reverse cycle, with louvered sides, and less than 6,000 Btu/h	8.0	11.1
2. Without reverse cycle, with louvered sides, and 6,000 to 7,999 Btu/h	8.5	10.3
3. Without reverse cycle, with louvered sides, and 8,000 to 13,999 Btu/h	9.0	11.0
4. Without reverse cycle, with louvered sides, and 14,000 to 19,999 Btu/h	8.8	11.1
5. Without reverse cycle, with louvered sides, and 20,000 Btu/h or more	8.2	9.6
6. Without reverse cycle, without louvered sides, and less than 6,000 Btu/h	8.0	10.7
7. Without reverse cycle, without louvered sides, and 6,000 to 7,999 Btu/h	8.5	9.9
8. Without reverse cycle, without louvered sides, and 8,000 to 13,999 Btu/h	8.5	10.7
9. Without reverse cycle, without louvered sides, and 14,000 to 19,999 Btu/h	8.5	10.8
10. Without reverse cycle, without louvered sides, and 20,000 Btu/h or more	8.2	9.3
11. With reverse cycle and with louvered sides	8.5	10.8
12. With reverse cycle and without louvered sides	8.0	10.4

DOE received over 8,000 comments during the comment period on the 1994 Proposed Rule and from participants at public hearings held in Washington, DC on April 5–7 and June 7–8, 1994. Most of the comments related to other products; twelve of the comments dealt specifically with room air conditioners.

After reviewing the comments on the proposed standards for room air conditioners, the Department concluded that a number of significant issues were raised which required additional analysis. In 1995, the Department revised the analyses regarding room air conditioners to account for the comments and data received during the public comment period. (This revised analysis became the basis for the 1996 Draft Report.)

A moratorium was placed on publication of proposed or final rules for appliance efficiency standards as part of the FY 1996 appropriations legislation. Pub. L. 104–134. That moratorium expired on September 30, 1996.

In 1995 and 1996, the Department conducted a review of its process for developing appliance energy efficiency standards. This review resulted in the publication of a final rule, entitled ''Procedures for Consideration of New or Revised Energy Conservation Standards for Consumer Products'' (hereinafter referred to as the Process Rule). 61 FR 36973 (July 15, 1996). Although the new procedures in the Process Rule do not apply to this rulemaking, 61 FR at 36980, DOE has employed an approach consistent with the new procedures in completing work on this rule. In keeping with the new process, and based on comments received in response to the Proposed Rule, DOE distributed for comment a Draft Report on the Potential Impact of Alternative Energy Efficiency Levels for Room Air Conditioners (hereinafter referred to as Draft Report). The Draft Report contained DOE's revised analysis, begun in 1995, examining five alternative efficiency levels. The Draft Report was distributed to a mailing list that included all of the commenters on the proposed rule on room air conditioners on May 5, 1996. (EE–RM–93–801–RAC[2] No. 1 and No. 2.) The letter invited comment on the Draft Report by no later than July 1, 1996.

Between the beginning of June and the end of November 1996, DOE received six comments on the Draft Report and related issues. DOE officials also held meetings on September 26 with representatives of the Association of Home Appliance Manufacturers (AHAM) and interested manufacturers and on September 27 with the American Council For an Energy Efficient Economy (ACEEE), the Alliance to Save Energy, the Natural Resources Defense Council (NRDC), and State energy officials from California, Florida, and Oregon. (EE–RM–93–801–RAC No. 11 and No. 12.)

On the basis of these comments, DOE prepared a TSD which comprises the Draft Report and a supplemental analysis conducted on a candidate standard level not included in the Draft Report. The supplemental analysis focused on a set of efficiency levels for the same 9 classes analyzed in the proposed rule. (EE–RM–93–801–RAC No. 13.)

In a **Federal Register** (FR) Notice dated January 29, 1997, the Department reopened the comment period for room air conditioners for 15 days. This notice announced the availability of the supplemental analysis and gave indication of the standard levels the Department was inclined to promulgate in the final rule. The Department received 4 comments in response to this notice.

II. Summary of Final Rule

The standards set forth in today's rule are projected to save approximately 0.64 quad of energy through 2030. Although

[2] EE–RM–90–201 refers to the docket for the September 1990 advance notice and the 1994 Proposed Rule. Docket No. EE–RM–93–801–RAC contains the 1996 Draft Report, comments to the 1996 Draft Report, comments to the 1997 reopening notice, and the supplemental analysis.

the standards in the Proposed Rule were projected to save 2.2 quads, DOE has concluded, based on public comment and further analysis, that the proposed standards are not economically justified. The standard levels set forth in today's rule are significantly less costly than those standards in the proposed rule. The following table presents the standards established in today's rule:

Product class	Energy efficiency ratio, effective as of	
	January 1, 1990	October 1, 2000
1. Without reverse cycle, with louvered sides, and less than 6,000 Btu/h	8.0	9.7
2. Without reverse cycle, with louvered sides, and 6,000 to 7,999 Btu/h	8.5	9.7
3. Without reverse cycle, with louvered sides, and 8,000 to 13,999 Btu/h	9.0	9.8
4. Without reverse cycle, with louvered sides, and 14,000 to 19,999 Btu/h	8.8	9.7
5. Without reverse cycle, with louvered sides, and 20,000 Btu/h or more	8.2	8.5
6. Without reverse cycle, without louvered sides, and less than 6,000 Btu/h	8.0	9.0
7. Without reverse cycle, without louvered sides, and 6,000 to 7,999 Btu/h	8.5	9.0
8. Without reverse cycle, without louvered sides, and 8,000 to 13,999 Btu/h	8.5	8.5
9. Without reverse cycle, without louvered sides, and 14,000 to 19,999 Btu/h	8.5	8.5
10. Without reverse cycle, without louvered sides, and 20,000 Btu/h or more	8.2	8.5
11. With reverse cycle, with louvered sides, and less than 20,000 Btu/h	8.5	9.0
12. With reverse cycle, without louvered sides, and less than 14,000 Btu/h	8.0	8.5
13. With reverse cycle, with louvered sides, and 20,000 Btu/h or more	8.5	8.5
14. With reverse cycle, without louvered sides, and 14,000 Btu/h or more	8.0	8.0
15. Casement-Only	([1])	8.7
16. Casement-Slider	([1])	9.5

[1] Casement-only and casement-slider room air conditioners are not separate product classes under standards effective January 1, 1990. These units are subject to the applicable standards in classes 1 through 14 based on unit capacity and the presence or absence of louvered sides and a reverse cycle.

III. Discussion of Comments

a. Room Air Conditioner Comments.

This section addresses comments to the 1994 Proposed Rule, the 1996 Draft Report, and the 1997 reopening notice. The ''RAC'' notation signifies that the following comment is from Docket No. EE–RM–93–801–RAC which contains comments to the 1996 Draft Report and the 1997 reopening notice. All other comments are from Docket No. EE–RM–90–201 which contains comments from the 1994 Proposed Rule. Note that the Draft Report addressed many of the comments to the 1994 Proposed Rule.

1. Classes

In the 1994 Proposed Rule, the Department proposed fourteen classes of room air conditioners. These product classes consisted of five categories; units with side louvers, units without side louvers, units with reversing valve and with side louvers, units with reversing valve and without side louvers, and casement-type units. There were five class divisions by capacity within each of the two categories without reversing valves. Casement-type units were divided into the following two classes: casement only units and casement-slider units.

Units with louvered sides and without reversing valves. The California Energy Commission (CEC) proposed a reduction in product classes from twelve to four, eliminating the class divisions based on capacity. They stated that the profusion of classes makes comparison of models difficult since the label-reading consumer does not compare all the models available. In addition, disincentives could be created that discourage manufacturers from making efficiency improvements to models near capacity breakpoints because design changes can push the capacity into the next category which has a higher or lower standard level. (CEC, No. 539 at 2–3.) Fedders Corporation (Fedders) proposed that the three smallest capacity classes for units with side louvers and without reversing valve be consolidated into a single class. It called for this consolidation due to the disparity in cost and dehumidifying capability that would arise from having significantly different efficiency standards promulgated for these three classes. (Fedders, April 7, 1994, Transcript at 120–122.) AHAM proposed that the Department retain the current five capacity class divisions for units with side louvers and without reversing valves. (AHAM, No. 1 at 2.)

In the 1994 Proposed Rule, DOE explained that performance and installation constraints necessitate class divisions by capacity. Manufacturers limit their production of cabinets to three or four sizes. Units of similar capacity tend to be designed for the same cabinet size. The space and configuration limitations imposed by the cabinet tend to produce units with similar efficiencies. Because efficiency is essentially a function of cabinet size, and thus capacity, class divisions by capacity are warranted. In the Final Rule, the minimum efficiency standards for each of the four classes with louvered sides and capacities less than 20,000 Btu/h all have nearly the same efficiency value (efficiencies range from 9.7 to 9.8 EER), reducing the concern about inappropriate incentives to change product capacity to take advantage of capacity based standards. The Department agrees with AHAM that the current 5 capacity-based classes should be retained.

Units without louvered sides and without reversing valves. AHAM, Frigidaire Company (Frigidaire), and Sanyo Electric Company (Sanyo) proposed that classes without louvered sides and without reversing valve be consolidated into two classes: units with capacities of less than 8,000 Btu/h and units with capacities greater than or equal to 8000 Btu/h. (AHAM, No. 1 at 2; Frigidaire, No. 544 at 5; Sanyo, No. 771 at 3.) AHAM states that the capacity classes established for units with side louvers and without reverse cycle are not particularly applicable to the other types of classes. (AHAM, RAC No. 4 at 1.) In support of making this recommendation, AHAM stated that since the 1990 minimum efficiency standards became effective, models without louvered sides have been produced only in the 6,000 to 7,999 Btu/h capacity class or the 8,000 to 13,999 Btu/h class. The sizes of existing sleeves and the efficiency standards have constrained capacities to these two classes. (AHAM, No. 1 at 20.) In its comments to the 1996 Draft report, AHAM again urged the Department to reduce the number of classes from five

to two for these units. (AHAM, RAC No. 4 at Attachment 1 pg. 1.)

As discussed with respect to classes with louvered sides and without reversing valves, class divisions by capacity are warranted for units without louvered sides because of the effect that economic and installation constraints have on capacity and efficiency. Although manufacturers currently do not produce units in two of the existing five capacity classes, the Department has decided not to consolidate these classes into those units with capacities less than and greater than 8,000 Btu/h. However, the new standards for the two classes of units less than 8,000 Btu/h are the same (9.0 EER) and the new standards for the three classes of units with capacities of 8,000 Btu/h or more are the same (8.5 EER.) In the future, manufacturers might produce units in classes where none are currently being produced. For example, models are now being produced in the less than 6000 Btu/h class where models were not being manufactured previously. Therefore, the Department will retain all five of the existing classes for units without louvers and without reverse cycle.

Units with reversing valves. AHAM and Sanyo proposed that units with reversing valves be consolidated into a single class if the efficiency standard specified for them is a single fixed EER difference below all other cooling-only classes (i.e., classes without reversing valve.) A fixed EER difference of 0.5 EER was proposed. (AHAM, No. 1 at 2; Sanyo, No. 771 at 3.) This recommendation essentially creates as many classes for units with reversing valves as there are for units without reversing valves. Both Whirlpool Corporation (Whirlpool) and Fedders agreed with this recommendation. (Whirlpool, April 7, 1994, Transcript at 106; Fedders, April 7, 1994, Transcript at 136.) In a April 23, 1996 joint letter to AHAM, ACEEE and NRDC agreed with the fixed 0.5 EER difference between reverse-cycle classes and their corresponding ''cool-only'' classes. (ACEEE/NRDC, RAC No. 3 at 4.) In addition, during a meeting with ACEEE, Alliance to Save Energy, California Energy Commission, Florida Energy Office, Oregon Department of Energy, and NRDC, a recommendation was made to refer to reverse cycle products as ''heat pump air conditioners'' in the future. (RAC No. 10 at 2.) AHAM responded that these systems are not designed to be sophisticated heat pumps but rather to modify a room air conditioner by adding a reverse cycle to ''make it function as a heat pump within the confines of a relatively small enclosure.'' (AHAM, RAC No. 6 at 3.)

The Department has determined its current class structure for units without reversing valves (two product classes: one for units with louvered sides and another for units without louvered sides) is not adequate. Therefore, the Department is adding two classes for units with reverse cycle to accommodate the concerns expressed in public comments. The two additional classes are class 13—units with reverse cycle, with louvers, and with a capacity of 20,000 Btu/h or more—and class 14—units with reverse cycle, without louvers, and capacity of 14,000 Btu/h or more.

Casement-Type Units. In the 1994 Proposed Rule, the Department proposed additional classes for casement-slider and casement-only room air conditioners because of the unique utility they offer to the consumer. Casement-type units offer a performance-related feature (fitting into casement windows) which other room air conditioners cannot provide. AHAM and Frigidaire supported the Department's proposal to establish separate classes for casement only and casement/slider units. In addition, AHAM stated that because of the limited number of models available and the narrow range of capacities, class divisions by capacity are not necessary for these unit types. (AHAM, No. 1 at 21–22; Frigidaire, No. 544 at 6.) In their comments to the Draft Report, ACEEE and NRDC recommended that casement-only units be combined in the same category as casement-slider units due to the fact that there is only one casement-only unit on the market. ACEEE and NRDC are also concerned that a loophole may be created because lower-priced casement units may be used in applications that do not require the special dimensions required by casement-only units. They commented that adjustable side panels can be used to enclose the space created when a window is wider than the air conditioner. (ACEEE/NRDC, RAC No. 5 at 4.)

The Department believes that the size limitations imposed on casement-type units are more significant than those faced by typical units which are designed for double-hung windows. Since this performance-related feature justifies a lower efficiency standard, separate classes will be established for casement-slider and casement-only units. The Department agrees with AHAM that class divisions by capacity are not necessary because of the narrow range of capacities in which models are currently available. According to AHAM's Directory of Certified Room Air Conditioners, casement-slider units range in capacity from 5,000 to 11,000 Btu/h, while there is currently only one casement-only unit, which has a capacity of 6,200 Btu/h. The Department believes that there is utility added by having a casement-only as well as a casement-slider class. In addition, the Department believes that the dimensions of casement units are restrictive enough to prevent a loophole.

Ductless Split Systems. Fedders proposed that ductless split system air conditioners be regulated under room air conditioner efficiency standards as it believes that they are directly competing against room air conditioners for market share. (Fedders, April 7, 1994, Transcript at 123.) The NRDC agreed with the Fedders recommendation. (NRDC, No. 55 at 28)

The Department's efficiency standards for split system-type central air conditioners also apply to ductless split systems. The Department makes no distinction between split systems which deliver conditioned air with or without ducts. Thus, because split systems are covered under standards for central air conditioners, ductless split system air conditioners will not be established as an additional class for room air conditioners.

2. Design Options

Commenters provided detailed comments on several of the design options that were analyzed by the Department for the proposed rulemaking.

Rotary compressors. Compressor efficiency was the design option that drew the greatest amount of comment. AHAM, Amana Refrigeration, Inc. (Amana), Frigidaire, Fedders, Sanyo, Matsushita Electric Corporation (Matsushita), Whirlpool, and Tecumseh Corporation (Tecumseh) all provided comments stating that rotary compressors cannot attain the 11.5 to 12.0 EER efficiency levels assumed in the Department's analysis. They stated that the maximum efficiency of currently available rotary compressors falls in the 10.7 to 10.9 EER range. Compressor manufacturers stated that only minor efficiency improvements are expected within the next three to five years. The combined effect of these efficiency improvements would yield only a 11.1 to 11.3 EER rotary compressor. And although efficiency increases of this magnitude may be theoretically achievable, they would require the development of high-efficiency motors which are currently not available, use of higher-grade materials in the rotary compressor

mechanism, and new compressor production methods and equipment. Both AHAM and Amana additionally commented that physical samples of new compressors need to be available to room air conditioner manufacturers at least 36 months prior to the effective date of the standards to provide adequate time for development, reliability and field testing. (AHAM, No. 1 at 7; Amana, Inc., No. 347 at 1; Frigidaire, No. 544 at 2; Fedders, April 7, 1994, Transcript at 121–122; Sanyo, No. 771 at 7–9; Matsushita, April 7, 1994, Transcript at 88–90; Tecumseh, April 7,1994, Transcript at 97–99; Whirlpool, April 7, 1994, Transcript at 102–103.) ACEEE commented that compressor efficiencies have been improving in recent years and are still below the theoretical limit. It stated that according to trade press articles, rotary and reciprocating compressors with efficiencies exceeding 11.0 EER are already available and further increases in efficiency are being developed. It argues that if 11.5 to 12.0 EER compressors are not realized, other technologies could be used to attain the Department's proposed efficiency levels. (ACEEE, No. 557 at 21.) ACEEE and NRDC commented that slightly more efficient compressors which are likely to become available soon should be used in the analyses in future rulemakings. (ACEEE/NRDC, RAC No. 5 at 1.)

The Department rejects AHAM's suggestion that design options must be available 36 months prior to the effective date of the standards. However, the prediction in the 1994 Proposed Rule that 11.5 to 12.0 EER compressors would be available by the year new efficiency standards would become effective was based on development plans of a compressor manufacturer to produce 11.6 to 12.0 EER compressors. Subsequently, those development plans were canceled. Because rotary compressor manufacturers state that they cannot produce compressors with efficiency levels approaching the 11.5 to 12.0 EER range, the Department, in the Draft Report, analyzed only rotary compressors which are currently on the market. Depending on their capacity, the most efficient rotary compressors range in efficiency from 10.7 to 11.1 EER. In its comments to the 1996 Draft Report, AHAM stated that the revised report addressed its concerns. (AHAM, RAC No. 4 at Attachment 1, pg 2.)

Scroll compressors. Only AHAM provided comments regarding scroll compressors. It stated that scroll compressors are currently not available in capacities less than 18,000 Btu/h and that efficiencies are either no more or slightly more efficient than rotary compressors. In addition, scroll compressor application heights are typically three to five inches greater than comparable rotary compressors, therefore requiring a larger chassis. Copeland Corporation (Copeland), a scroll compressor manufacturer, was cited by AHAM as having announced plans to develop a new, smaller scroll design optimized in the 14,000 to 24,000 Btu/h capacity range. AHAM stated this design could be expanded effectively into room air conditioner applications with more reasonable cost premiums and with efficiencies possibly in the 11.5 to 12.0 EER range, but because it is not possible to make these compressors available to manufacturers 36 months prior to the effective date of new standards, they should not be considered by the Department for this rulemaking. (AHAM, No. 1 at 8.) Again, ACEEE and NRDC in their joint comments to the Draft Report stated that slightly more efficient compressors which are likely to become available soon should be used in the analyses in future rulemakings. (ACEEE/NRDC, RAC No. 5 at 1.)

Again, the Department rejects AHAM's suggestion that design options must be available 36 months prior to the effective date of the standards. Although Copeland Corporation is currently investigating this more efficient compressor technology in the 14,000 to 24,000 Btu/h capacity range, they could not commit to produce it. Because there was not sufficient evidence this technology would be available by the effective date of the standards, only Scroll compressors which are currently on the market were considered for the Department's Final Rule analysis. For compressors which would be suitable for room air conditioner applications, Copeland's scroll compressors currently range in efficiency from 10.8 to 11.1 EER. The lowest capacity scroll compressor offered by Copeland is 16,500 Btu/h. Thus, scroll compressors were only considered for room air conditioners with capacities of at least 16,000 Btu/h. The information DOE received from compressor manufacturers showed that scroll compressor heights are only 1–2 inches greater than comparable rotary compressors. Moreover, because this design option was not contained in any of the standard levels the Department found to be economically justified, the Department does not consider this height differential to be an issue. AHAM commented that it was satisfied with the treatment of this issue in the Draft Report. (AHAM, RAC No. 4 at Attachment 1 pg. 2.)

Reciprocating compressors. The Department's analysis of an advanced reciprocating compressor design called the inertia compressor received comments by AHAM, Frigidaire, and Bristol Compressors (Bristol.) All three commented that inertia compressors with efficiencies in the range of 11.5 to 12.0 EER are expected to be available within the next couple of years but only in capacities exceeding 18,000 Btu/h. Inertia compressors are significantly heavier, larger, and noisier than the rotary compressors that are currently used in room air conditioner applications. Larger chassis sizes would be required to accommodate the increased weight and size of the inertia compressor. In addition, sound blankets would be necessary to muffle the increased noise levels. Thus, cost premiums and the accompanying application costs make inertia compressors difficult to cost justify for room air conditioners. (AHAM, No. 1 at 8–9; Frigidaire, No. 544 at 2; Bristol, June 7, 1994, Transcript at 355–362.)

Although the Department recognizes that advanced reciprocating compressors are heavier and larger than existing rotary compressors, no information was provided as to how great the application costs for enlarging and bracing the chassis would be for incorporating them into room air conditioner units. Thus, only the cost of the compressor itself, with its accompanying sound blanket, was explicitly included in the Department's Final Rule analysis. For those instances where the advanced reciprocating compressor exceeded the weight of the rotary compressor by a significant amount (over 30 percent), an increase in chassis size was assumed to be necessary for incorporating the larger and heavier compressor. Therefore, a design option which resulted in a chassis size increase (i.e., increased evaporator and condenser face areas) always preceded the incorporation of an advanced reciprocating compressor. The added costs for increasing the chassis were assumed to cover the expense of incorporating the reciprocating compressor. For compressors which would be suitable for room air conditioner applications, Bristol's inertia compressors currently range in efficiency from 11.2 to 11.8 EER. The lowest capacity inertia compressor offered by Bristol is 18,000 Btu/h. Thus, inertia compressors were considered only for room air conditioners with capacities of at least 18,000 Btu/h. In its comments to the 1996 Draft Report, AHAM indicated that this approach

addressed its concerns. (AHAM, RAC No. 4 at Attachment 1 pg 2.)

Fan motor efficiency. Only AHAM provided comments with regard to improvements in fan motor efficiency. It stated that permanent split capacitor (PSC) fan motors are already used in 98 percent of room air conditioners. The efficiency of PSC fan motors fall in the range of 50 percent to 70 percent with larger motors being more efficient. AHAM admitted that some modest gains may be achieved with PSC fan motors in specific applications. With regard to electronically commutated motors (ECM), otherwise known as brushless permanent magnet motors (BPM), AHAM stated that they cost 2.5 to 3 times more than standard PSC motors. In addition, they weigh approximately twice that of a standard PSC motor. ECM efficiencies range from 68 percent to 78 percent. ECMs are currently not available with the double ended shaft required for room air conditioner applications because controls block one end of the motor. AHAM believes that ECMs with double ended shafts are not likely to be made available in the foreseeable future. Even if ECMs were manufactured with double ended shafts, AHAM claimed that manufacturers would need physical samples 24 months before the effective date of standards. (AHAM, No. 1 at 10 and RAC No. 4 at 5.)

The Department recognizes that most room air conditioner designs already incorporate permanent split capacitor fan motors. But for two of the product classes analyzed, the representative baseline units used inefficient shaded pole motors. Thus, for these two classes, significant efficiency gains were achieved by replacing the shaded pole motors with more efficient permanent split capacitor motors. For all other classes, the representative baseline units already incorporate permanent split capacitor motors. Further fan motor efficiency increases were assumed to be achieved only through the use of ECMs. Although current ECM controls are situated at one end of the motor, the Department believes that there is no reason why they cannot be moved to another location on the motor. Thus, it is assumed that ECMs can be manufactured with double ended shafts. Although the Department recognizes that ECMs weigh approximately twice as much as standard permanent split capacitor motors, no information was provided about the application costs for bracing the chassis to incorporate them into room air conditioner units. Thus, only the cost of the ECM itself was explicitly taken into account in the Department's Final Rule analysis. However, because the analysis showed that ECMs were not an advantageous design option, any cost increases due to increased ECM weight need not be considered further. In its comments to the 1996 Draft Report, AHAM indicated that the analysis, which assumes a fan motor efficiency of 30 percent for shaded pole and 50 percent for permanent split capacitor (PSC) when changing from a shaded pole to a PSC, addresses its concern. (AHAM, RAC No. 4 at Attachment 1, pg. 2.)

Variable speed compressors. AHAM stated that variable speed compressors are not currently used in room air conditioner applications and should not be considered a technically viable design option. AHAM commented that the cost premium is 30 percent to 50 percent above comparable single-speed compressors. Although variable speed compressors are available off-shore in capacities and sizes suitable for use in room air conditioners, improvements in efficiency cannot be measured with the Department's current test procedure. AHAM commented that the Department's current single condition test procedure adequately matches consumer usage patterns for room air conditioners. (AHAM, No. 1 at 12.) AHAM does not believe variable speed compressors are ''capable of being assembled into room air conditioners by the effective date'' and should not be considered a viable design option. (AHAM, RAC No. 4 at 5.)

Although the Department recognizes that the current test procedure is not adequate for determining the benefits due to variable speed compressors, they are still analyzed as a design option for room air conditioners. As done for the Proposed Rule's analysis, efficiency gains are established based on estimates from central air conditioning applications. The efficiency improvement, because it is primarily a result of reduced cycling (i.e., reduced on and off operation), is reported in terms of the seasonal energy efficiency ratio (SEER). A minimum efficiency standard cannot be based on its inclusion because the current test procedure does not recognize a SEER rating as an appropriate measure of efficiency. In addition, variable speed compressors were not included in any of the efficiency levels DOE determined to be economically justified.

Heat exchanger design options. A number of comments were received regarding design changes to improve heat exchanger (evaporator and condenser) performance. These improvements can be put into two categories: designs for increasing the heat exchanger surface area and designs for increasing the heat transfer coefficients. The heat transfer surface area can be increased by any of the following methods: increasing the frontal area of the coil by increasing the height or width; adding a subcooler to the condenser coil; increasing the depth of the coil by adding vertical tube rows; or increasing the fin density. The heat transfer coefficients can be increased by using an enhanced fin design or grooved (rifled) refrigerant tubing.

With regard to heat exchanger improvements, manufacturers expressed great concern over design options that would require an increase in chassis size, namely, increases in heat exchanger size. AHAM claimed that tooling for a new chassis size can range in cost from $1.5 to $5.0 million per manufacturer. In addition, it stated that there are limits to the efficiency that can be achieved through increases in coil size without causing problems with latent cooling capacity (i.e., dehumidification.) It also stated that if standards require larger chassis sizes, there will be loss of utility in terms of portability and availability of larger capacities that can fit into smaller windows. In addition, availability of very large capacities would be reduced. (AHAM, No. 1 at 11–12.) AHAM also stated that an increase in coil size could affect compressor reliability. It stated that if room air conditioner efficiency is increased by enlarging the coil, the compressor capacity must be reduced to maintain the capacity of the system. But because the unit now has more refrigerant as a result of enlarging the coil, it is more likely that the smaller compressor's maximum charge limitation would be reached. The closer the refrigerant charge comes to the compressor's charge limit, the more likely that compressor failure would occur. (AHAM, Transcript, April 7, 1994, at 66.) Amana stated that its current coil designs are already optimized. (Amana, Inc., No. 347 at 1.) Sanyo stated that increasing the condenser surface area is not feasible as the chassis enclosure is already too crowded. (Sanyo, No. 771 at 9.)

AHAM and several manufacturers commented that the Department's proposed efficiency standards would require increases in chassis size for all room air conditioner product classes because some design options that the Department assumed would be available, primarily 11.5 to 12.0 EER compressors, would not exist by the time the proposed standards became effective. AHAM stated that even a small increase in the efficiency standard will cause some models to move to a larger chassis size. According to AHAM,

92 percent of total production would need to move to a larger chassis size to meet the standards proposed in the 1994 Proposed Rule. AHAM further commented that because chassis sizes vary widely among manufacturers, new standards will have significant competitive effects. (AHAM, No. 1 at 1, 14–18.) Amana, Whirlpool and Frigidaire all provided comments reinforcing AHAM's comments. Amana stated that to meet the Department's proposed standards it would need to redesign nine of thirteen basic models into a larger chassis. These manufacturers further commented that the higher prices resulting from chassis size increases place an unfair burden on low income consumers. (Amana, No. 347 at 1; Whirlpool, No. 391A. at 1; Frigidaire, No. 544. at 3.)

AHAM provided the Department with a graph which shows the percentage of production which would be required to change chassis size at each EER. (AHAM No. 1 at 14.) In its comments to the Draft Report, AHAM states that ''more stringent standards [than the standards proposed by AHAM] will cause a significant number of chassis size changes with step function-like cost implications to manufacturers and raise utility, marketing and competitive issues.'' (AHAM, RAC No. 6 at 1.) AHAM stated the baseline model method of analysis does not realistically represent the impact on cost of increasing the chassis size. AHAM believes the Department should weight the cost of a larger chassis by the proportion of models needing a larger chassis to achieve specific efficiency levels. (AHAM, RAC No. 4 at 3.) In their most recent comments, ACEEE and NRDC state this approach is reasonable, but they believe the life cycle cost minimums, resulting when costs of chassis size increases are prorated, should be used to select standards. Referring to the graph provided by AHAM, ACEEE and NRDC state that the proportion of models requiring a larger chassis size at 9.8 EER is ''scarcely different'' than the proportion required by 9.5 EER and that only at EER levels above 9.8 EER do a significant proportion of models need a larger chassis. Furthermore, they state ''to consider chassis size as an independent decision-making factor would overemphasize chassis size in making a final decision.'' (ACEEE/NRDC, RAC No. 5 at 2.)

The impact of increased heat exchanger size on dehumidification was assessed with the engineering computer simulation model. The simulation model not only estimates the efficiency increase that results from adding more coil area but also its effect on latent heat removal. For all the room air conditioners which were modeled, the heat exchanger increases which were analyzed resulted in latent heat ratios of at least 25 percent. The latent heat ratio is the latent heat rate removal of the air conditioner divided by its total cooling capacity. AHAM considers 25 percent to be the minimum acceptable latent heat ratio. With regard to the issue of compressor reliability, although the Department recognizes that an increase in coil size coupled with a decrease in compressor capacity could affect the reliability of the compressor, manufacturer data were not provided as to the maximum charge limit of room air conditioner compressors. The Department's analysis of larger coil sizes assumed that the compressor capacity would not have to be reduced when analyzing larger coil sizes. Thus, with regard to how the Department conducted its analysis, it is unlikely that compressor reliability would be negatively impacted. Moreover, increasing evaporator/condenser coil area was not contained in any of the standard levels DOE found to be economically justified.

With regard to the issue that some manufacturers may be competitively disadvantaged by being required to increase chassis size, the Department carefully considered the information provided by AHAM which indicates that the proposed standards in the 1994 Proposed Rule would require 92 percent of manufacturers to increase chassis size. Both the Department and AHAM recognize that any change in efficiency standard will require some manufacturers to increase chassis size. The Department has attempted to reduce the number of chassis size changes as much as possible while still achieving the goal of promulgating standards which maximize energy efficiency consistent with economic justification. The standards set forth would require an increased chassis size for a substantially smaller subset—approximately 25 percent—of products.

The Department considered AHAM's recalculations of life-cycle cost minimums which prorated the cost of chassis size increases. (AHAM, RAC No. 9 at Attachment 3A.) DOE has selected standard levels corresponding to the minimum life cycle costs when chassis size cost is prorated for the classes for which AHAM provided this information (i.e., classes 1 through 5).

AHAM commented that manufacturers will make adjustments to the number of tube rows and the density of fins in order to optimize heat exchanger performance. Because heat exchangers are, in general, already optimized, however, adjusting either the tube rows or the fin density is not a significant factor in increasing system efficiency. (AHAM, No. 1 at 9.) Sanyo stated that adding tube rows or fin material causes increased air flow restrictions and requires design changes to fan and fan motors. If motor speeds are increased to obtain high airflow, unacceptable noise levels result. (Sanyo, No. 771 at 9.)

The Department agrees with AHAM and Sanyo that the number of tube rows and the fin density are already optimized to yield the greatest heat exchanger performance. In using the engineering computer simulation model, increases in either tube row density or fin density provided negligible increases in system performance. In its comments to the 1996 Draft Report, AHAM indicated that because the simulation model shows negligible increases in system performance by increasing the fin density and number of tube rows, AHAM is no longer concerned about this matter. (AHAM, RAC No. 4 at Attachment 1 pg. 2.)

AHAM stated that enhanced fins are already used in 64 percent of the evaporators produced by manufacturers and 99 percent of the condensers. AHAM also commented that good projections for the efficiency improvement due to enhanced fins are not available. AHAM further commented that the increased use of enhanced fins in evaporators is likely to be limited because in some cases condensate drainage is a limiting factor. AHAM believes that additional significant improvements in fin design are not expected in the foreseeable future. (AHAM, No. 1 at 10.) Sanyo stated that many models already employ enhanced fins. (Sanyo, No. 771 at 9.)

The Department recognizes that most room air conditioner designs incorporate enhanced fins. Consequently, most of the representative baseline units for the product classes analyzed by the Department already include enhanced (i.e., slit-type) fins. For those baseline units where enhanced fins could be added, efficiency improvements were based on information provided by room air conditioner and heat exchanger manufacturers. Publicly available research information was used to check the reasonableness of the data supplied by manufacturers. The manufacturer information also included data on how densely enhanced fins could be packed until condensate drainage became a problem. In accordance with this manufacturer data, the Department's

analysis limited enhanced fin densities before condensate drainage became a problem. In its comments to the 1996 Draft Report, AHAM indicated that this approach addressed its concerns. (AHAM, RAC No. 4 at Attachment 1 pg. 2.)

AHAM stated that grooved refrigerant tubes are already used in 97 percent of the evaporators produced by manufacturers and 86 percent of the condensers. AHAM also commented that good projections for the efficiency improvement due to grooved tubes are not available. AHAM does not expect additional significant improvements in tube design in the foreseeable future. (AHAM, No. 1 at 10.) Sanyo stated that many models already employ grooved tubes. (Sanyo, No. 771 at 9.)

As with enhanced fins, the Department recognizes that most room air conditioner designs already incorporate grooved refrigerant tubing. However, for many of the representative baseline units that were selected (with consultation from AHAM) for the Proposed Rule's analysis, grooved tubing was not incorporated into the design. For the Department's Proposed Rule analysis, manufacturer test data was used to determine the efficiency improvements due to grooved tubing. However, publicly available research data indicated the manufacturer test data overstated the possible improvement. In addition, the analysis conducted for the Proposed Rule did not account for the increase in refrigerant-side pressure drop due to the grooved tubing. Thus, for the Department's analysis for the Final Rule, efficiency and pressure drop estimates were based on research data published by the American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE.) In its comments to the 1996 Draft Report, AHAM commented that this approach addressed its concern. (AHAM, RAC No. 4 at Attachment 1 pg. 2.)

In their comments to the Draft Report, ACEEE and NRDC state that the report seems to ignore a new heat exchanger technology by Modine Technology that can achieve ''at least a 0.75 increase in EER'' without changing chassis size. (ACEEE/NRDC, RAC No. 5 at 1.) The advocates recommend that new technologies such as this one be considered in future rulemakings. The Oregon Department of Energy also stated its belief that most manufacturers were in contact with Modine Technology. (RAC No. 10 at 2.)

The efficiency improvement made possible by the new heat exchanger technology to which the energy efficiency advocates referred is based on theoretical calculations. Modine Technology's new heat exchanger has shown improvements in central air conditioners; however, it has not been tested in room air conditioners. The Department does intend to analyze this technology in future rulemakings.

AHAM, Amana, Frigidaire, Fedders, and Sanyo all provided comments with regard to subcoolers. Test data was provided indicating that the efficiency improvement due to subcoolers is significantly lower than that estimated by the Department in the 1994 Proposed Rule. AHAM presented data indicating that, on average, the actual efficiency and capacity improvements are 44 percent and 67 percent, respectively, of that projected by the Department's simulation model. Also, according to the AHAM, four out of seven room air conditioner manufacturers do not currently use subcoolers and five of the seven manufacturers would need to make major tooling changes on all or some of their chassis. (AHAM, No. 1 at 6–7; Amana, No. 347 at 2; Frigidaire, No. 544 at 2–3; Fedders, No. 693 at 2–6; Sanyo, No. 771 at 9.)

Based on comments, the Department used manufacturer test data to calibrate the subcooler efficiency increases that were estimated by the simulation model. For each room air conditioner model simulated, the temperature of the condensate into which the subcooler is immersed was adjusted until the simulated efficiency increase matched that indicated by the manufacturer test data. Depending on the capacity of the unit, the manufacturer test data demonstrates unit efficiency increases of between 1.4 percent to 3.0 percent, as compared to approximately 6 percent increases found in the analysis for the Proposed Rule. The simulation model was adjusted based on this test data. AHAM indicated that this approach addressed its earlier concern. (AHAM, RAC No. 4 at Attachment 1 pg. 2.) In addition, DOE used manufacturer cost information provided by AHAM to calculate the economic impact of incorporating a subcooler as one of the room air conditioner design options.

Design options already in use. Many manufacturers claimed that they already use many of the design options that are being considered by the Department for increasing energy efficiency. (AHAM, April 7, 1994, Transcript at 51–52; Amana, No. 347 at 1; Frigidaire, No. 544 at 4; Fedders, No. 693 at 1; Sanyo, No. 771 at 8.) Both Amana and Frigidaire stated that they already use high efficiency rotary compressors, grooved tubes, enhanced fins and permanent capacitor fan motors. Amana stated that the only design options available for increasing efficiency are more efficient compressors, larger coil sizes, larger chassis sizes, and the addition of a liquid line subcooler. (Amana, No. 347 at 1; Frigidaire, No. 544 at 4.)

The design options which are considered in the analysis are based on the characteristics of the representative baseline units. The baseline models used in this analysis were selected through consultation with AHAM. If a baseline unit does not include particular design options, then those options are analyzed as measures to improve the efficiency of the unit. Although some of these design options are already commonly used, they may not all be used simultaneously. For example, some of the baseline units used more efficient compressors to achieve a certain efficiency rating, while many of the units on the market used less efficient compressors but improved heat exchanger design options to achieve the same level of efficiency.

3. Engineering Simulation Model

The Department received several comments regarding the engineering computer simulation model that it used in its analysis of efficiency improvements for room air conditioners. Comments were provided primarily by AHAM and can be categorized into three areas: (1) the accuracy of the simulation model; (2) the method in which the modeling analysis was conducted; and (3) the selection of baseline models for room air conditioners without louvered sides.

In comparing simulation results from the Department's computer simulation model to test data gathered from four room air conditioner models, AHAM demonstrated that there is a marked tendency for the simulation model to overestimate system efficiency. It concluded that the simulation model has the potential for making errors of 5 percent or more, especially when extended well beyond the point where actual correlative test data exists. (AHAM, No. 1 at 3.) Frigidaire and Sanyo reinforced the AHAM's comments when they presented data demonstrating that the simulation model estimated higher benefits for design options than are realized in practice. (Frigidaire, No. 544 at 4; Sanyo, No. 771 at 10–12.)

The simulation model was extensively reviewed by the room air conditioner industry. For the 1994 Proposed Rule, simulation results were calibrated to manufacturer test data for all of the representative baseline units modeled. The Department recognizes that when simulation results are calibrated to a single manufacturer's test

data, it is possible that the model will yield errors of 5 percent or more when used to simulate the performance of other manufacturers' units. Where test data is not available, the Department expects to continue to use the simulation model to estimate the efficiency increases resulting from the incorporation of design options. When manufacturer test data is provided, as in the case of subcoolers, the Department will use it to adjust the simulation model.

AHAM commented that several errors were made in the simulation modeling. The first pertains to compressor modeling and the fact that actual compressor performance data was used only in the modeling of baseline equipment. The Department derived performance data for more efficient compressors by multiplying the motor input values from the baseline compressor data by the ratio of the baseline and high-efficiency compressor nominal energy efficiency ratios (EER.) This type of analysis shows overall room air conditioner efficiency improvement equal to 89 percent of the nominal compressor EER improvement. Limited test data shows that the overall room air conditioner efficiency increase is about 75 percent of the nominal compressor EER improvement. AHAM advocated using actual compressor performance data for the analysis of more efficient compressors but to limit maximum system efficiency improvements to 75 percent of the nominal compressor EER increase. It also stated that when deriving compressor coefficients for input to the simulation model, the Department must use compressor performance data that spans the entire range of evaporating and condensing temperatures under which the compressor might operate. Otherwise, incorrect input coefficients could be generated. (AHAM, No. 1 at 3–6 and AHAM, RAC No. 4 at Attachment 1 pg 1.)

The Department agrees with AHAM that actual compressor performance data should be used to model the performance of compressors. Nominal compressor performance is based on ratings at standardized temperature conditions, and actual compressor performance may be significantly different at actual room air conditioner operating conditions. Using the nominal efficiency to compare the performance between two compressors only provides the efficiency difference at the standardized conditions. Using actual compressor performance data to model compressor operation captures the effect that different operating conditions have on room air conditioner performance. Thus, actual compressor performance data, spanning the entire range of evaporating and condensing temperatures in which the compressor might operate, was used to model the performance of all the compressors analyzed for the Final Rule. The Department disagrees with AHAM that system efficiency improvements should be limited to 75 percent of the nominal compressor EER increase. The basis for using compressor performance data is to more accurately assess the system improvement due to more efficient compressors. Placing a ceiling on the efficiency improvement eliminates the possibility of gaining system EER increases due to more favorable compressor operating conditions. As it turned out, most of the compressors modeled as design options in the Final Rule analysis yielded system efficiency increases that were equal to or less than 75 percent of the nominal compressor EER increase. Only one of the compressors analyzed yielded a system efficiency increase significantly above the AHAM's suggested 75 percent ceiling. This compressor was used at standard level 5, which was found to be not economically justified.

According to AHAM, another error in the simulation modeling concerns the use of superheat. It noted that the Department incorrectly specified the input for superheat from manufacturer test data by using the difference between the mid-evaporator temperature and a temperature on the suction line. It claimed that the Department should have adjusted the superheat input to the simulation model until the difference between the averages of the simulated evaporator inlet and outlet temperatures and the simulated suction line inlet and outlet temperatures were equal to the test value. (AHAM, No. 1 at 5.)

The Department's method for specifying the superheat was in accordance with recommendations made by AHAM in 1990. These recommendations included making modifications to the simulation model in order to account for the presence of an accumulator. The modifications were based on treating the inlet to the accumulator as the inlet to the compressor shell for rotary compressors. In order to account for superheating occurring within the accumulator, the simulation model was modified to include provisions to account for the temperature and pressure increases that occur within the accumulator. The location on the suction line where the temperature was measured was at the accumulator inlet (i.e., the suction line outlet). The superheat in the simulation model is defined as the difference between the compressor shell inlet's refrigerant and saturation temperatures; therefore, knowing that the suction line temperature was measured at the accumulator inlet provided confidence in using it to specify the superheat. Because the test data did not provide the accumulator inlet's saturation temperature, the mid-evaporator temperature was used as a close approximation of the evaporator saturation temperature, which is also a close approximation for the compressor shell inlet saturation temperature. Therefore, the Department believes it appropriate to use the difference between the mid-evaporator and accumulator inlet temperatures to specify the superheat. AHAM indicated in its comments to the Draft Report that this method addresses its concerns. (AHAM, RAC No. 4 at Attachment 1, pg. 1.)

In estimating room air conditioner efficiency increases resulting from more efficient fan motors, AHAM commented that it was inappropriate to use combined fan and fan motor efficiencies as input to the simulation model. Rather than using efficiencies, it advocated using fan motor power as an input as it asserts that room air conditioner efficiencies will be overestimated by using fan and fan motor efficiencies. (AHAM, No. 1 at 5.)

The simulation model was originally developed to model the performance of central air conditioners. Manufacturers generally agreed to this approach. However, some adjustments had to be made to model a different air delivery system. For room air conditioners, the evaporator and condenser fans are both driven by a single fan motor, as opposed to central air conditioners, in which each fan is driven by its own fan motor. For the room air conditioner model, the Department decided to describe the air delivery system with combined fan and fan motor efficiencies in order to account for the impact of evaporator and condenser air-side pressure drop on fan motor power use. This modeling scheme also assumed that the evaporator fan accounted for 40 percent of the total fan motor power while the condenser fan accounted for the remaining 60 percent. AHAM was in agreement with modeling the room air conditioner's air delivery system by using a ''40/60 split'' on the fan motor power. But due to this modeling scheme, only 60 percent of the fan motor heat loss was added to the condenser air stream. All of the heat loss from the fan motor should be added to the condenser air stream as the motor resides in the outdoor section of the room air conditioner. The Department

decided to change the simulation model in order to account for the fan motor's full heat loss. In the Department's analysis for the 1994 Proposed Rule, simulation results were calibrated to test data for all the baseline models. Because accounting for the full heat loss slightly lowers the system efficiency, minor adjustments had to be made to the power and capacity correction factors contained in the input files in order to recalibrate the simulation results to the baseline model test data. In AHAM's comments to the 1996 Draft Report, AHAM indicated that this method addressed its concerns. (AHAM, RAC No. 4 at Attachment 1, pg 1.)

AHAM claimed the simulation modeling analysis used incorrect power consumption penalties to account for reversing valves and for no louvers. With regard to reversing valves, AHAM noted that the TSD for the 1994 Proposed Rule reports two different power consumption penalties: 3 percent and 4 percent. AHAM noted that the Department's simulation analysis actually calculates a power reduction value of 2.5 percent. AHAM recommended using a penalty of five percent when modeling reverse cycle units with the simulation model. With regard to the power consumption penalty used for units without louvered sides, AHAM claimed that the value of 4 percent used in the Department's simulation analysis does not account for the reduced airflow across the condenser coil due to the non-louvered sides. Although it proposed no alternative power penalty to account for non-louvered sides, it stated that the condenser face area being modeled should be decreased because outdoor air is drawn through the back of the unit rather than through louvered sides, and thus less condenser area is available for heat exchange. (AHAM, April 7, 1994, Transcript at 62–65.)

For the 1994 Proposed Rule, power consumption penalties to account for reversing valves and to account for no louvers were applied only to the compressor's power consumption. Because the power penalty is assessed only to the compressor, the overall power increase for the entire room air conditioner is always slightly smaller than the reported power penalty value. The TSD for the Proposed Rule did mistakenly report two different penalties for reversing valves. The value that was actually used was 3 percent. The power penalty used to account for non-louvered sides was 4 percent. A 5 percent power penalty was used for the Final Rule to account for products with a reversing valve. Because an alternative power penalty value was not proposed for non-louvered sides, the Department retained the use of a 4 percent power penalty. This 4 percent power penalty was assumed to account for any degradation in performance due to drawing outdoor air directly through the condenser coil. Thus, the modeled condenser face area was not reduced.

In its comments to the 1996 Draft Report, AHAM states that although the Draft Report indicates that power consumption penalties were used in the simulation model, it appears (referencing Table 1.6 of the Draft Report) that baseline data for actual models were used, and that these results are not consistent with actual practice. (AHAM, RAC No. 4 at 2.) The Department did use the power consumption penalties in the simulation model for the Draft Report. Table 1.6 of the Draft Report is intended to show that the results produced by the simulation model are close to the actual test data.

Both AHAM and Sanyo asserted that the Department selected baseline models for ''through-the-wall'' units (units without louvered sides) with efficiencies that were not representative of the class. They both stated that baseline models were derived from models with louvered sides, and thus, the analysis conducted for these products is meaningless. Sanyo stressed that the largest capacity size within the smallest enclosure for the particular product class of interest should be selected as a representative baseline model. (AHAM, No. 1 at 19; Sanyo, No. 771 at 6–10.)

In the analysis for the 1994 Proposed Rule, representative baseline models for non-louvered and reversing valve classes were derived from the baseline models that were selected for louvered classes. The Department agrees with AHAM and Sanyo in that actual baseline units should be used to represent the non-louvered and reversing valve classes. Thus, the Department based its analysis of non-louvered and reversing valve classes on modeling of actual baseline units. With regard to non-louvered classes, manufacturer data were available only for two of the existing five capacity classes; 6,000 to 7,999 Btu/h and 8,000 to 13,999 Btu/h. Thus, analyses were conducted only for the two classes where manufacturer data were available. Manufacturer data were also available for selecting representative baseline units for reversing valve classes, with and without louvered sides, and engineering analyses were conducted for both these classes.

Based on its recommended changes for improving the performance of the engineering simulation model, AHAM re-ran the model for the five capacity classes with louvered sides and without a reversing valve. For all five classes, the efficiency levels determined by AHAM's simulation analysis were significantly lower than the Department's proposed efficiency standards. (AHAM, No. 1 at 26.) Using the version of the simulation model that the Department used for its Proposed Rule analysis, Sanyo conducted a simulation analysis for classes without louvered sides. With its analysis, it also concluded that efficiency gains were significantly below those that the Department demonstrated were possible for classes without louvered sides. (Sanyo, No. 771.) Like AHAM, Fedders also performed an efficiency analysis for the five capacity classes with louvered sides and without a reversing valve. But instead of using the Department's simulation model, it used test data (and interpolated estimates based on test data) to project efficiency increases. Fedders' results were similar to AHAM's in that the efficiency levels that were calculated were significantly lower than the Department's proposed standards for all five classes. (Fedders, No. 693 at Sec. 1, 1–6.)

Based on the comments received, DOE made a number of adjustments to the simulation model, as described above, and changed the method in which certain design options were analyzed. After these adjustments, the Department's simulation results were close to those reported by AHAM. For the five capacity classes being compared, these were the only two classes for which DOE and AHAM had efficiency results that differed by greater than 1 percent—the 6,000 to 7,999 Btu/h class and the 14,000 to 19,999 Btu/h class.

In the case of the 6000 to 7999 Btu/h class, the discrepancy (approximately 3 percent) between AHAM's simulation results and the Department's simulation results for the Final Rule can be attributed to an error in the earlier simulation model. This error, which was present in the simulation model that AHAM used and that the Department used in its analysis for the Proposed Rule, was corrected for the Department's Final Rule analysis. Thus, correcting this error in the version of the simulation model used by the AHAM would yield a predicted efficiency that would be closer to that estimated by the Department for the Final Rule. The error related acceptable difference between the calculated condenser exiting temperatures from the two subroutines—because the acceptable difference was too low, the model

converged at solutions that produced condenser heat transfer coefficients which were too small.

In the case of the 14,000 to 19,999 Btu/h class, the discrepancy (approximately 3.5 percent) was primarily attributable to AHAM's method of estimating efficiency improvements due to an additional design option (condenser grooved tubes) that was analyzed by the Department but not by AHAM. If the Department had not considered this design option, the discrepancy would only be 0.6 percent.

In AHAM's comments to the 1996 Draft Report, AHAM stated that it was ''satisfied with the efficiency analyses of models with side louvers and without reverse cycle up to the application of the BPM fan motor and the variable speed compressor'' and that after correcting for the errors described in the preceding paragraphs, ''the correlations would all be within an acceptable 1%''. (AHAM, RAC No. 4 at 2.)

With regard to Fedders' estimates, the Department's revised efficiency estimates were still significantly different: discrepancies, on average, were over 3.5 percent. Unfortunately, Fedders did not provide detailed information on how it arrived at its estimates. Given the close agreement with the results reported by AHAM, the Department is comfortable with its revised simulation results.

In its comments to the Draft Report, AHAM stated that the ''fine tuning of the simulation model has led to reasonably good correlations'' for models with side louvers and with a reverse cycle. However, AHAM stated that although the simulation model was calibrated to baseline data for actual models without louvers and actual models with a reverse cycle, ''the simulated effect of the applied design options is not consistent with actual practice.'' AHAM also stated that considerable time and effort would be required to ''get the same level of correlation that was achieved for models with louvers and without a reverse cycle.'' AHAM also states that the wide variability of results when comparing simulation model efficiency results to AHAM's results shows that there is a ''significant problem'' in simulating models with reverse cycle. (AHAM, RAC No. 4 at 2–4.) In addition, with regard to units with a reverse cycle, AHAM stated that ''poor correlation with these units is most likely due to the unusual restrictions in the refrigeration circuit due to the reversing valve and compromises made to balance both the heating and the cooling of the unit.'' (AHAM, RAC No. 4 at 4.) ACEEE and NRDC recommended in their joint comments that ''problems with the simulation models can be dealt with by examining the efficiencies of units now on the market, in order to sanity check the simulation model results.'' (ACEEE/NRDC, RAC No. 5 at 3.)

The Department agrees that its computer model may not accurately simulate actual performance for models without louvers (classes 6–10) or models with a reverse cycle (classes 11 and 12). Consequently, the Department has relied more heavily on the comments in selecting standards levels. For classes with a reverse cycle, the Department chose standard levels which took into consideration the comments by both the manufacturers and energy efficiency advocates. With regard to the recommendation made by ACEEE and NRDC, the Department consulted the AHAM directory when making decisions on the efficiency standards to set forth in this rule.

4. Proposed Efficiency Standards

Support for proposed standards. Southern California Edison Company (SCEC), ACEEE, Central Hudson Gas & Electric Corporation (CHGEC), and Alabama Power Company (APC) all generally supported the Department's proposed standards. ACEEE stated that the standards proposed in the 1994 Proposed Rule are supported due to the availability of products with high efficiency levels in the marketplace. ACEEE stated that according to AHAM's 1993 and 1994 directories, units with louvered sides and without a reversing valve are available with efficiencies exceeding 11.0 EER in the 6000 to 7999 Btu/h and 8000 to 13,999 Btu/h product classes. In the 14,000–19,999 Btu/h product class, models are available with efficiencies of 10.5 EER. The ACEEE asserted that even if the Department underestimated the extra first cost of the proposed standards by a factor of two, they would still be cost effective. (ACEEE, No. 557 at 20–22.) CHGEC stated that for its service area, the proposed standards would save approximately 103 kWh per unit for a typical 8000 Btu/h size. (CHGEC, No. 601 at 1.) SCEC and APC generally supported the rulemaking proposals. (SCEC, No. 14 at 1; APC, No. 696 at 20.)

Although the Department recognizes the comments supporting the proposed standards, lower efficiency standards are being promulgated in this Final Rule. Revisions made to both the engineering simulation model and the method in which certain design options were analyzed, based on public comment, resulted in lower efficiency standards being selected for all product classes.

Proposed standard level 6. In addition to receiving comments in support of the proposed standards, the NRDC commented that the Department did not provide justifiable reasons for rejecting even the higher efficiency standards in the 1994 Proposed Rule. NRDC's argument included: (1) the Department's rejection of the higher standards (described as standard level six in the 1994 Proposed Rule) based on the standard level's long payback is legally unacceptable; (2) though short-term return on equity is reduced by standard level six, the long-term return is not significantly reduced; and (3) manufacturer cost impacts are premised on the continuation of current practices for utility rate design under which residential peak kilowatt-hours do not carry a price premium. (NRDC, April 5, 1994, Transcript at 115–116.)

There are significant differences between the candidate standard levels selected for the proposed rule and those levels selected for the final rule. These differences are a result of revisions made to the engineering analysis.

In response to NRDC's specific comments, the Department recognizes that in determining whether a standard is economically justified, the Secretary cannot consider the failure to meet the rebuttable presumption criterion. EPCA, section 325(o)(2)(B)(iii), 42 U.S.C. 6295(o)(2)(B)(iii). However, the Department does consider energy cost savings relative to incremental first cost. EPCA, section 325(o)(2)(B)(I)(II), 42 U.S.C. 6295(o)(2)(B)(I)(II). The Department also considers both short run and long run return on equity as important factors in determining the rule's impact on manufacturers. In addition, the Department strives to fairly assess consumer cost impacts, including sensitivity analysis of high and low State energy prices.

Adverse effects of standards. The Department received several comments regarding the adverse affects of promulgating the proposed standards. The greatest concern of manufacturers, that heat exchanger coils and cabinets would need to be expanded, at significant expense, in order to meet the Department's proposed standards, was discussed previously under comments pertaining to design options requiring increased chassis sizes. Other manufacturer concerns included: (1) The disparity in the proposed efficiency levels for class 1 (less than 6,000 Btu/h, with louvers and without a reversing valve) and class 2 (6,000–7,999 Btu/h, with louvers and without a reversing valve); (2) the effect of higher efficiency

standards on the replacement market for ''through-the-wall'' units (i.e., units without louvered sides) ; (3) the effect higher standards would have on sales of units with reversing valves; (4) the impact on the dehumidification capability of low capacity units; and (5) the impact on low-income consumers.

The proposed standard of 11.1 EER for class 1 units was significantly greater than the proposed standard of 10.3 EER for class 2 units. Both AHAM and Frigidaire claimed that this disparity in the efficiency levels will result in significantly higher consumer costs for class 1 units. They asserted that this disparity will eventually eliminate class 1 units from the marketplace because consumers would purchase less expensive class 2 units. They stated that eliminating low cost class 1 units would adversely effect low income consumers. With regard to energy consumption, for applications where class 1 units are more suitable, they stated that class 2 units might run less to provide the same amount of cooling, but their overall power consumption would be higher because they would operate at a lower efficiency. For units of equal efficiency providing cooling to environments with the same sensible and latent loads, limited manufacturer test data indicated that a class 2 unit (6,000 Btu/h capacity) consumes 6 percent more power than a class 1 unit (5,000 Btu/h capacity.) In addition, both AHAM and Frigidaire claimed that to offset humidity effects, class 2 units would probably be run with a lower thermostat setting resulting in increased run times and increased energy use. Both commenters urged the Department to set standard levels for class 1 units that are no greater than the standards that are set for class 2 units. (AHAM, No. 1 at 18–19; Frigidaire, No. 544 at 6–9.)

ACEEE also noted the disparity in the proposed efficiency levels for class 1 and class 2 units. It noted that class 3 units (8,000 to 13,999 Btu/h) have a significantly higher efficiency standard than class 2 units. ACEEE commented that promulgating a significantly lower standard for class 2 units would likely result in manufacturers concentrating a greater fraction of shipments in this size range, leading to lower than expected energy savings from the proposed standards. The ACEEE urged the Department to raise the standard for class 2 units to 11.0 or 11.1 EER. ACEEE claimed this level is ''technically feasible according to the Department's analysis,'' citing that the top-rated model in the market in this capacity range has an 11.0 EER. ACEEE believed that because the DOE life-cycle cost analysis showed only a slight increase in life-cycle cost going from an EER of 10.25 to 10.74 for this capacity range, a ''small additional step to an EER of 11.0—11.1 should not have much of an impact on LCC either.'' It also urged the Department to raise the standard for the 6000 to 7999 Btu/h product class without side louvers to the same levels being proposed for the less than 6000 Btu/h and 8000 to 13,999 Btu/h product classes. (ACEEE, No. 557 at 22.)

The Department disagrees that ACEEE's extrapolation of the life-cycle cost analysis of the 1994 Proposed rule indicates that an increase to 11.0—11.1 EER should have little impact on life-cycle cost. Moreover, the reanalysis provided in the Draft Report resulted in efficiency levels for classes 1 and 2 being approximately the same. AHAM indicated in its comments to the Draft Report that these results addressed its concerns. (AHAM, RAC No. 4 at Attachment 1, pg 3.) In addition, for the final rule, the Department has selected standards for class 1 and class 2 that are equal. ACEEE and NRDC also support these standard levels. (ACEEE/NRDC, RAC No. 14 at 3.)

AHAM, manufacturers, and real estate organizations commented that the proposed efficiency standards would obsolete the replacement market for ''through-the-wall'' units (i.e., units without louvered sides.) Because of the unavailability of 11.5 to 12.0 EER compressors, chassis sizes would need to be increased to meet the proposed efficiency standards. But because of the overall size restrictions due to ''through-the-wall'' sleeves already in service, chassis sizes cannot be increased without obsoleting the existing sleeves. If existing wall openings are expanded to accommodate larger units, retrofit costs are estimated to be between $250 and $500. These commenters argue that the proposed standards would force the discontinuation of higher capacity systems as only smaller capacity units would be able to fit into existing sleeve openings. (AHAM, No. 1 at 19; Given & Spindler Companies (G&S), No. 302 at 1–2; Frigidaire, No. 544. at 5; Institute of Real Estate Management (IREM), No. 553 at 7; Sanyo, No. 771 at 3–6; Friedrich Air Conditioning Co. (Friedrich), April 7, 1994, Transcript at 77–80.) Both IREM and G&S requested that the Department exempt ''through-the-wall'' units because of the undue burden upon owners who will be forced to make retrofit changes without any financial compensation. (G&S, No. 302 at 1–2; IREM, No. 553 at 7.) Sanyo stated that the efficiency levels proposed in the 1994 Proposed Rule would force higher capacity units to be discontinued. (Sanyo, No. 771 at 3.) The AHAM presented data demonstrating that existing models meeting the current efficiency standards already employ all available design options. The AHAM stated that any increase in efficiency can only be accomplished by increasing chassis size or by further decreasing cooling capacity. (AHAM, No. 1 at 20.) Frigidaire stated that above 8,000 Btu/h, any increase in the current standard ''will result in a lower BTUH capacity, thus reducing the utility of this product category.'' Frigidaire notes that in order ''to comply with the 1990 Energy Standards, we were forced to reduce the capacity in this product class from 13,500 BTU to 10,700 BTU.'' (Frigidaire, No. 544 at 5.) In its comments to the 1996 Draft Report, AHAM reiterated the industry's struggle to achieve the current standards in the largest capacity models which has resulted in the reduction of the maximum capacity available. (AHAM, RAC No. 4 at 4.) Both the National Apartment Association (NAA) and the National Multi Housing Council (NMHC) requested that the Department adopt an efficiency standard for units without louvered sides that takes into consideration the adverse impact upon the multi-family housing industry. (G&S, No. 302 at 2; IREM, No. 553 at 7.) Because the multi-family housing industry predominantly uses air conditioner units without louvered sides, NAA and NMHC are concerned about the impact of increased cabinet size (due to higher efficiency standards) on these ''through-the-wall'' units.

The ACEEE opposed exempting ''through-the-wall'' units from more stringent standards. It stated that such an exemption would create a loophole that could result in a significant reduction in energy savings. It believed that manufacturers should be able to produce these units using the same or similar components used in louvered-type units. Through gains in economy of scale, costs with maintaining different product lines for models with and without side louvers could be avoided. (ACEEE, No. 557 at 23.) ACEEE and NRDC are particularly concerned about loopholes if standards are not increased for units below 14,000 Btu/h. (ACEEE/NRDC, RAC No. 5 at 3.) In February 1997, ACEEE and NRDC urged the Department to raise the standard for class 8 (units without louvers, without a reverse cycle, and 8,000—13,999 Btu/h) to 8.7 EER in an effort to reduce the likelihood of a loophole. In addition, they stated that according to the data provided by AHAM (AHAM, RAC No. 9 at Attachment 1), the 1994 sales weighted average for this class is 8.73

EER. (ACEEE/NRDC, RAC No. 14 at 3.) AHAM stated that these concerns are based ''on the incorrect view that these products are essentially the same except for the presence of side louvers.'' AHAM states that the elimination of side louvers causes extensive changes that result in ''a significant loss of efficiency for the same capacity.'' (AHAM, RAC No. 6 at 2.) Furthermore, AHAM stated that increasing the standard for class 8 would eliminate higher capacity units, causing harm to building owners and consumers, and would ''violate NAECA's safe harbor rule in Section 325(n)(4).'' (AHAM, RAC No. 16 at 4.)

In its comments to the 1994 Proposed Rule NRDC was concerned that the practice of using small sleeves may amount to a permanent constraint on how far energy efficiency can be increased. It suggested that the Department analyze what fraction of the market cannot accept design options that increase sleeve size. Then the Department should determine the economic impact of replacing design options that do require increased size with other less cost-effective options for that fraction of the market that cannot adapt. NRDC also suggested that the Department consider adopting a second tier of efficiency standards which would be available for states to adopt voluntarily through building codes. This way, room air conditioners could be designed to the optimum level for the new construction market without imposing unreasonable costs on the replacement market. (NRDC, No. 55 at 27.)

The Department agrees with manufacturers and real estate organizations that added retrofit costs would be necessary for units which require larger sleeves and, as a result, larger wall openings. Thus, for units without louvered sides, an additional installation cost of $375 is assumed for design options which require a larger chassis (i.e., for increased evaporator and condenser face areas.) The Department was not provided with the necessary information to determine the percentage of existing sleeves which could not accept larger chassis sizes. Thus, the added retrofit cost of $375 was assumed to apply to all units requiring a chassis size change. In addition, since the percentage of units being used in new construction is believed to be small, all units were assumed to incur the added retrofit cost, regardless of application. The Department examined the 1997 AHAM Directory. It indicates that for higher capacity models (9,000 Btu/h or more), only one manufacturer currently produces units which could meet the advocates recommendation of 8.7 EER, despite the fact that this value is the 1994 shipment weighted average for this class. The Department agrees that there is reason to believe that increasing standards for units without louvers and without reverse cycle may result in eliminating higher capacity units from the market. Thus, the Department will not increase standards for ''through-the-wall'' units of 8,000 Btu/h capacity or more in today's rule. These standard levels minimize or eliminate the need to increase chassis size. Consequently, the Department does not believe the multifamily housing industry will be negatively impacted.

As for the advocates concern over possible loopholes, the Department intends to monitor market trends for these classes and will consider these trends during its next review of room air conditioner standards. Regarding NRDC's suggestion that the Department adopt a second tier standard for states to adopt voluntarily through building codes, in accordance with the legislation, a recommendation for a second tier standard for adoption through voluntary building codes must be done separately from manufacturing standards. However, because the ''through-the-wall'' units account for only about one-tenth of air conditioner energy use and because only a fraction of these units are in new construction, the Department does not believe this measure is warranted.

In their comments to the 1994 Proposed Rule, AHAM and Whirlpool also expressed that, as a result of setting standards too high for units with a reversing valve, more electric resistance heat models will be sold because of their significantly lower cost. They stated that this will result in an overall increase in energy consumption. (AHAM, No. 1 at 21; Whirlpool, April 7, 1994, Transcript at 103–105.) The standards for units with a reverse cycle set forth in today's rule are significantly lower than those standards proposed in the 1994 Proposed Rule, so this concern should be mitigated.

Fedders claimed that energy consumption due to reduced dehumidification is adversely affected by the standard levels proposed in the 1994 Proposed Rule for class 1 through class 3. Fedders presented calculations demonstrating that units meeting the proposed standard levels will consume more energy than units meeting existing efficiency standards. Fedders stated that units meeting the proposed standard levels will need to operate longer in order to dehumidify as effectively as units meeting the existing standards. (Fedders, No. 693 at 1–5, Sec. 2.)

Fedders' claims of longer run times for more efficient units are based on its estimates of the dehumidification capability of existing minimum efficiency units and those which comply with the Proposed Rule's proposed efficiency standards. Fedders' dehumidification data for units at the proposed efficiency levels were based on historical test data which were extrapolated to the proposed levels. The Department's engineering simulation model indicated that the proposed efficiency standards did not significantly reduce the dehumidification capability of the units which were modeled. The Department has questions about Fedders' assumptions used to calculate room air conditioner run times. For example, although Fedders acknowledges that sizing recommendations for room air conditioners are dependent on such things as building construction, window types and insulation levels, its cooling load calculations are based on a single room size and a single set of initial indoor room conditions. Most importantly, because the standards promulgated in this final rule are significantly lower than those proposed in the 1994 Proposed Rule, the dehumidification capabilities should no longer be in question.

One of the country's largest retailers, the Sears, Roebuck and Company (Sears), asserted that the standards proposed in the 1994 Proposed Rule impose disproportionate hardships on low income consumers as most room air conditioner consumers have lower than average incomes. Whirlpool substantiates this claim by presenting data on the income distribution of typical room air conditioner purchasers. (Sears, April 7, 1994, Transcript at 115; Whirlpool, No. 391A at 1–2.)

The standards set forth in the final rule will have substantially less impact on purchase price than those standards proposed in the 1994 Proposed Rule and will have shorter payback periods. For example, class 1 has an approximate first cost increase of $10, and a payback period of approximately 2 years, satisfying the rebuttable presumption criteria for economical justification. The Department does not believe the standards set forth today will have a substantial negative impact on low income consumers.

Efficiency Standards Recommendations. Several commenters concerned about adverse effects of promulgating the efficiency standards proposed in the 1994 Proposed Rule recommended to DOE alternative levels

at which to set the standards for room air conditioners. For classes with louvered sides and without a reversing valve, Frigidaire recommended the following efficiency standards: 9.0 EER for the less than 6000 Btu/h class, 9.5 EER for the 6000 to 7999 Btu/h class, 9.5 EER for the 8000 to 13,999 Btu/h class, 9.5 EER for the 14,000 to 19,999 Btu/h class, and 8.5 EER for the greater than 20,000 Btu/h class. (Frigidaire, No. 544 at 10.) In its comments to the 1994 Proposed Rule, Fedders called for consolidating the three smallest capacity classes into a single class and setting the efficiency standard at 10.0 EER. For the two largest capacity classes, Fedders agreed with the Department's proposed standards (11.1 and 9.8 EER). (Fedders, April 7, 1994, Transcript at 120–122.) The CEC recommended a single efficiency standard for all classes with louvered sides and without a reversing valve. It recommended setting the efficiency standard based on the level which the Department proposed (11.0) for the most popular class (i.e., the 8000 to 13,999 Btu/h class.) (CEC, No. 539 at 2,3.)

For classes without louvered sides and without a reversing valve, AHAM, Frigidaire, and Sanyo recommended that the current five capacity classes be consolidated into two classes: units less than 8000 Btu/h and units greater than or equal to 8000 Btu/h. For the less than 8000 Btu/h class, AHAM, Frigidaire, and Sanyo all recommended setting the efficiency standard at 9.0 EER. For the greater than or equal to 8000 Btu/h class, they all recommended setting the standard at 8.5 EER. AHAM presented data demonstrating that existing models meeting the current efficiency standards already employ all available design options. They stated that any increase in efficiency can only be accomplished by increasing chassis size or by further decreasing cooling capacity. (AHAM, No. 1 at 20; AHAM RAC No. 4 at 1–2; Frigidaire, No. 544 at 5; Sanyo, No. 771 at 3.) Friedrich recommended that units without louvered sides be exempt from efficiency regulation. (Friedrich, April 7, 1994, Transcript at 84.) The CEC recommended a single efficiency standard for all classes without louvered sides and without a reversing valve. The Commission recommended setting the efficiency standard based on the level which the Department proposed (10.7 EER) for the most popular class (i.e., the 8000 to 13,999 Btu/h class). (CEC, No. 539 at 2,3.)

For classes with a reversing valve, AHAM stated that the efficiency of a reverse cycle unit in the cooling mode is theoretically less than the efficiency for a cooling-only model due to the additional pressure drop caused by the reversing valve and inefficiencies created by the refrigerant charge being adjusted for an acceptable balance between cooling and heating performance. AHAM presented data demonstrating that the average reduction in efficiency due to a reversing valve is 0.42 EER. In order to cover the majority of reverse cycle units, AHAM recommended setting a standard for reverse cycle units which is 0.5 EER less than the standard for a comparable cool-only model with or without louvered sides. (AHAM, No. 1 at 20, 21.) Both Sanyo and Whirlpool also recommended setting the same type of standard. (Sanyo, No. 771 at 3; Whirlpool, April 7, 1994, Transcript at 103–105.) The CEC proposed maintaining the current classification for units with a reversing valve; one class for units with louvered sides and another class for units without louvered sides. The CEC agreed the efficiency levels proposed by the Department for reverse cycle units. (CEC, No. 539 at 2,3.)

On April 23, 1996, ACEEE and NRDC sent a letter to AHAM with the following table of proposed standard levels (ACEEE/NRDC, RAC No. 3 at 3.):

Class	Standard level
Units without reverse cycle and with louvered sides:	
Capacity less than 20,000 Btu/h	10.0 EER.
Capacity 20,000 Btu/h and more	9.0 EER.
Units without reverse cycle and without louvered sides	9.0 EER.
Slider/casement and casement-only units	9.0 EER.
Units with reverse cycle, all capacities	0.5 EER less than the standard for comparable cool-only model.

In its comments to the 1996 Draft report, AHAM proposed the following standards (AHAM, RAC No. 6 at 2):

Class	Standard level
Units without reverse cycle and with louvered sides:	
Capacity less than 20,000 Btu/h	9.5 EER.
Capacity 20,000 Btu/h and more	8.5 EER.
Units without reverse cycle and without louvered sides:	
Capacity less than 8,000 Btu/h	9.0 EER.
Capacity 8,000 Btu/h or more	8.5 EER.
Units with reverse cycle, with louvers	8.5 EER. ***
Units with reverse cycle, without louvers	8.0 ERR.***
Casement-only	8.7 EER.
Casement-slider	9.5 EER.

*** AHAM would prefer to set the standard for reverse cycle units 0.5 EER less than the standard for its ''cool-only'' counterpart. This recommendation results in ten classes for reverse cycle units. Because DOE did not support ten classes for reverse cycle units, AHAM stated that the standard should be set in reference to the highest capacity class. For example, if the standard for models without reverse cycle, without louvers, 20,000 Btu/h or more were set at 8.5 EER, then the standard for units with reverse cycle, without louvers, 20,000 Btu/h or more should be set at 8.0 EER. (AHAM, RAC No. 6 at 2–3.)

Following the meetings in late September 1996, ACEEE modified its recommendation to the following standards (ACEEE/NRDC, RAC No. 5 at 4–5)

Class	Standard
Without reverse cycle and with louvered sides less than 6,000 Btu/h	9.7 EER.
Without reverse cycle and with louvered sides 6,000 to 7,999 Btu/h	9.7 EER.
Without reverse cycle and with louvered sides 8,000 to 13,999 Btu/h	9.8 EER.
Without reverse cycle and with louvered sides 14,000 to 19,999 Btu/h	9.7 EER.
Without reverse cycle and with louvered sides 20,000 or more Btu/h	8.5 EER.
Without reverse cycle and without louvered sides less than 14,000 Btu/h	9.0 EER.
Without reverse cycle and without louvered sides 14,000 or more Btu/h	8.5 EER.
With reverse cycle and with louvered sides	9.0 EER.
With reverse cycle, without louvered sides	8.5 EER.
Casement (Casement-only and Casement-slider)	9.5 EER.

For classes without louvered sides, ACEEE and NRDC stated in their November 1996 comments that they were willing to accept 8.5 EER for capacities of 14,000 Btu/h or more. However, ACEEE and NRDC emphasized their recommendation of 9.0 EER for the 8,000—13,999 Btu/h capacity class, stating that: this EER is the minimum life cycle cost point according to the Draft Report; the 1994 sales weighted average of 8.73 EER approaches this recommendation; and 20 percent of 1996 models in this class meet or exceed this level according to the March 1996 AHAM Directory. They were concerned that AHAM's 8.5 EER recommendation could ''create a loophole in that units without louvered sides at 8.5 EER would cost manufacturers less than units with louvered sides at 9.5 EER ($240 vs. $263 according to the DOE draft analysis).'' (ACEEE/NRDC, RAC No. 5 at 3.) In its comments to the Draft Report, AHAM states that there is a significant cost and energy efficiency differential between models with and without side louvers. (AHAM, RAC No. 6 at 2.) In February 1997, ACEEE and NRDC urged the Department to raise the standard for class 8 to at least 8.7 EER. (ACEEE/NRDC, RAC No. 14 at 3.)

As discussed earlier, although manufacturers currently do not produce units in two of the existing five capacity classes, the Department has retained the five capacity-based classes. The Department conducted analyses only for the two classes for which manufacturer data were available (the 6,000 to 7,999 Btu/h and the 8,000 to 13,999 Btu/h classes.) In this Final Rule, the Department has applied the same efficiency standard (9.0 EER) to the 6,000 to 7,999 Btu/h class and the less than 6,000 Btu/h class. The efficiency standard for the 8,000 to 13,999 Btu/h class (8.5 EER) is also applied to the 14,000 to 19,999 Btu/h class and the 20,000 Btu/h or more class. According to 1997 AHAM Directory, the highest capacity ''through-the-wall'' unit currently manufactured has a capacity of 12,500 Btu/h, and only one manufacturer currently makes units at a capacity of 9,000 Btu/h or higher which meet the 8.7 EER standard proposed by ACEEE/NRDC. On this basis, the Department has determined that raising this standard is likely to result in higher capacity models being withdrawn from the market to the disbenefit of consumers.

With regard to the comment that units without louvered sides at 8.5 EER would cost manufacturers less than units with louvered sides at 9.5 EER, ACEEE and NRDC appear to refer to the values found in tables 1.12 and 1.16 in the Draft Report. The two units being compared have different capacities; therefore a direct cost comparison is not appropriate. However, the Department shares the general concern about the possibility that differences in standard levels for different classes may cause shifts in product use and sales, and as stated previously, the Department intends to monitor market trends for these classes. If it appears that products without louvers are used in lieu of units with louvers because of differences in energy efficiency standards, the Department will consider the need to set comparable standards during its next review of room air conditioner standards.

In their comments to the Draft Report, ACEEE and NRDC recommend a 9.0 EER for reverse cycle units with louvers and an 8.5 EER for reverse cycle units without louvers. They stated that these levels are well below the minimum life-cycle cost point of the Draft Report. Furthermore, they state that a third of the 1996 reverse cycle units with louvers and 80 percent of the 1996 reverse cycle units without louvers meet these levels. The advocates also note that the only reverse cycle unit in the 1996 AHAM directory above 20,000 Btu/h has a 9.0 EER. (ACEEE/NRDC, RAC No. 5 at 3.) In addition, they are concerned about ''loopholes'' which may result if the standards are not raised. (RAC, No. 12 at 1.) AHAM counters that a loophole would not be created because the cost of building a unit with a reverse valve is ''quite significant.'' (AHAM, RAC No. 6 at 3.) The energy advocates also state that the Department's analysis appears to only evaluate cooling energy savings and not heating energy savings. (ACEEE/NRDC, RAC No. 5 at 2.)

In response to comments, DOE has split classes 11 and 12. AHAM, NRDC, and ACEEE all recommended setting the standards for reverse cycle units at 0.5 EER less than their cool-only counterparts. (ACEEE/NRDC, RAC No. 3 and AHAM, No. 1 at 21.) For units with reverse cycle and louvered sides, the energy efficiency advocates believe an EER of 9.0 is acceptable. (ACEEE/NRDC, RAC No. 5 at 5.) AHAM also finds this level to be acceptable for units with capacities less than 20,000 Btu/h. However, for units at 20,000 Btu/h or more, AHAM argues that the standard should not be higher than the standard for its ''cool-only'' counterpart. (AHAM, RAC No. 6 at 3.) The Department agrees. By splitting class 11 at 20,000 Btu/h, the Department can raise the standard for most of the units with reverse cycle and with louvers to 9.0 EER, without raising the standard for units of capacities of 20,000 Btu/h or more above the 8.5 EER of its cool-only counterpart.

Similarly, the Department has split class 12 and set the standard for units less than 14,000 Btu/h at 8.5 EER while keeping the standard for units of 14,000 Btu/h or more at 8.0 EER. This split is largely consistent with the recommendations of ACEEE, NRDC, and AHAM for a 0.5 EER differential between reverse cycle units and their ''cool-only'' counterparts for units without louvers, with the exception of units in the 8,000–13,999 Btu/h capacity range for which there is no differential. According to the 1997 AHAM directory, only one model with reverse cycle and without louvers in this capacity range does not meet an 8.5 EER. In response to the advocates question as to why the Department's analysis only evaluates cooling energy savings and not heating energy savings, the Department does not evaluate heating savings because the test procedure is unable to account for the heating energy savings.

In their February 1997 comments to the notice reopening the comment period, ACEEE/NRDC stated that establishing separate classes with weaker standards for higher capacity units with a reverse cycle is unnecessary because all currently existing models at these capacity levels meet their recommended standards, without splitting the classes. (ACEEE/NRDC. RAC No. 14 at 3.) Although all currently existing models with louvers and with a reverse cycle at 20,000 Btu/h or more meet a 9.0 EER, the Department does not believe new models entering the market should be required to meet a standard higher than the standard for a unit without a reverse cycle. In addition, the Department recognizes that no models currently exist with a reverse cycle and without louvers at 14,000 Btu/h or more; however, the Department believes that it should allow manufacturers the opportunity to design units without louvers and with a reverse cycle at higher capacities, and the evidence indicates that manufacturers could not meet a standard greater than 8.0 EER at capacities of 14,000 Btu/h or more. Furthermore, in April 1996, the advocates supported AHAM's recommendation to make the standard for reverse cycle units 0.5 EER less than the standard for its cool-only counterpart. (ACEEE/NRDC, RAC No. 3 at 3.) This recommendation would create 10 classes for reverse cycle room air conditioners. Thus, the Department questions why the advocates suggest that promoting only four classes for reverse cycle units is superfluous.

AHAM stated that casement-type units are already using all available design options and are limited in size because of their applications. (AHAM, No. 1 at 22.) In its comments to the Draft Report, AHAM recommended efficiency standards of 9.5 EER for slider/casement units and 8.7 EER for casement-only units. (AHAM, RAC No. 6 at 2.) In its comments to the 1994 Proposed Rule, Frigidaire recommended a standard of 9.0 EER for slider/casement units. (Frigidaire, No. 544 at 6.) Because the 1994 Proposed Rule did not propose standards for casement-type units, ACEEE, CEC, NRDC, and the New York State Energy Office (NYSEO) urged the Department to collect the necessary data in order to perform an analysis and set efficiency standards for these units. ACEEE and NRDC stated that if data is not available to perform an analysis, standards should be set for casement-type units that are equivalent to those for typical room air conditioners. NRDC added that the Department is prohibited under NAECA from reducing the stringency of energy efficiency standards. The CEC asked the Department to clarify whether States may adopt efficiency standards for casement-type classes without preemption or whether another standard level applies to these products until the Department adopts a separate level. (ACEEE, No. 557 at 23; CEC, No. 539 at 3; NRDC, April 5, 1994, Transcript at 116–117; NYSEO, June 8, 1994, Transcript at 18–19.) The Department considers casement-type units to be air conditioners. Therefore, these units are subject to the currently applicable standards based on unit capacity and the presence or absence of louvered sides and a reverse cycle.

In their February 1997 comments, ACEEE and NRDC stated that a special class set aside for one casement-only model in existence is not necessary. They are concerned that a casement-only unit at an 8.7 EER will be less expensive to produce than a ''standard'' unit at 9.7 EER. They believe this cost disparity would cause manufacturers to capitalize on this niche class. (ACEEE/NRDC, RAC No. 14 at 2.) AHAM counters that casement units are expensive relative to their capacity and that there would be no economic incentive to exploit this class. Furthermore, casement-only units add a unique utility not provided by casement-slider units. (AHAM, RAC No. 16 at 3.) In addition, in February 1997, Friedrich provided information regarding the relative costs of casement room air conditioners as compared to ''standard'' models with side louvers and without a reverse valve. This information shows that casement-only and casement-slider room air conditioners are significantly more expensive than units that do not meet the size constraints of casement room air conditioners. (RAC No. 18.) Therefore, the Department has found no economical advantage to using casement-type units at lower energy efficiency ratings for standard room air conditioner applications. Thus, the Department has selected separate classes for casement room air conditioners. DOE has selected the efficiency standard recommended by AHAM, ACEEE, and NRDC for casement-slider units (9.5 EER) (AHAM, RAC No. 6 at 2 and ACEEE/NRDC, RAC No. 5 at 5) and the standard recommended by AHAM for casement-only units (8.7 EER). (AHAM, RAC No. 6 at 2.) However, due to the energy efficiency advocates' concern about the possibility of ''loopholes,'' the Department will monitor market trends for these classes. If it appears that casement units are used in lieu of ''standard'' units because of differences in energy efficiency standards, the Department will consider the need to set comparable standards during its next review of room air conditioner standards.

AHAM stated that its recommended standards would result in meaningful energy savings but would alleviate the economic burden on manufacturers. AHAM states that in light of the economic burden of chassis size increases, the cumulative burden of other rulemakings, and the relatively modest energy use of room air conditioners that ''more stringent standards than that proposed by industry would be unreasonable and unjustified.'' (AHAM, RAC No. 6 at 1.)

The standards established in today's rule are similar to the standards recommended by AHAM. The Department selected slightly higher standards for the first four classes. AHAM's primary concern was the cost of increasing chassis size. Because the standard levels the Department has selected for the first five classes are based on the life cycle cost minimums when the cost of increasing chassis size is prorated, the Department believes the cost impact is reduced.

5. Other Comments

Effective date of standards. Commenting on the 1994 Proposed Rule, Fedders proposed accelerating the effective date from January 1st to August 1st. It claimed this would prevent manufacturers from producing large quantities of less efficient units during the months of August through December. (Fedders, April 7, 1994, Transcript at 123–124.)

AHAM urged the Department to set an effective date of October 1, 2000, in order to coordinate with manufacturing cycles. AHAM stated that production begins in August or September and runs through June or July. AHAM stated that an arbitrary effective date of 3 years from the date of the rule, and likely in the middle of a manufacturing season, would cause severe economic hardships on manufacturers which are not accounted for in the manufacturing impact analysis. (AHAM, RAC No. 16 at 3.)

The Department agrees, due to the unique seasonal nature of room air conditioners, the effective date should be coordinated with manufacturing cycles. Thus, this rule will take effect on October 1,2000.

Units consuming less than 500 watts. Commenting on the 1994 Proposed Rule, Fedders recommended that room

air conditioners consuming less than 500 watts be exempted from regulation. In support of this recommendation, it stated that a 3000 Btu/h capacity unit at an efficiency of 8.0 EER consumes 375 watts compared to a 5000 Btu/h capacity unit at 11.1 EER that consumes 450 watts. Fedders argued that this exemption would encourage development of units that are smaller and consume less energy and resources. (Fedders, April 7, 1994, Transcript at 122–123.) AHAM, Frigidaire, NRDC, and the ACEEE all opposed the Fedders' recommendation. AHAM disagreed with Fedders' claim that as many as two-thirds of the rooms in which 5000 Btu/h capacity units are installed could be adequately cooled with units as small as 3000 Btu/h. AHAM saw no reason that smaller units should be given an advantage by being exempted from a standard and ''strenuously disagreed with Fedders' proposed exemption for models of less than 500 watts.'' (AHAM, No. 1 at 23 and AHAM, RAC No. 4 at Attachment 1, pg 4.) Frigidaire stated that the recommendation by Fedders is counterproductive to saving energy as, under it, low capacity units of low efficiency will be introduced into the marketplace. (Frigidaire, No. 544 at 11.) The NRDC agreed with the motivation behind Fedders' suggestion but did not agree with the specifics of the recommendation as it would allow the creation of a new market driven entirely by low first cost. NRDC suggested that the Department consider a lower standard for a product class below 4000 Btu/h in capacity based on comparable criteria to the standard set for the below 6000 Btu/h class. (NRDC, No. 55 at 28.) The ACEEE opposed the Fedders' recommendation as it believes it could lead to widespread use of inefficient smaller capacity units. (ACEEE, No. 557 at 22.)

The Department agrees with both AHAM and ACEEE that room air conditioners which consume less than 500 watts should not be exempt from efficiency regulation. The Department recognizes that small capacity units may draw less power than larger capacity systems. But the Department does not agree with Fedders' claims that, for units in the less than 6000 Btu/h class, small capacity units will consume less energy than more efficient, larger capacity systems. In creating a separate product class for units with capacities below 6000 Btu/h, the Department has recognized that small capacity units are used differently than units in larger capacity classes. Applications for small capacity units tend to be for small rooms where the cooling load is relatively low. To further differentiate the less than 6000 Btu/h class by capacity would require field tests demonstrating that there are applications which are suitable specifically for units with extremely small capacities. Such field data has not been presented.

Phase out of HCFC–22. With concern that the phase out[4] of HCFC–22 (the refrigerant used by all room air conditioners) might be accelerated, AHAM recommended, in its comments to the 1994 Proposed Rule, that the Department promulgate a second tier of standard levels for HCFC-free room air conditioners. AHAM stated that some replacement refrigerants show a drop in efficiency of 10 percent. AHAM proposed that the second tier be set initially at 10 percent less than the efficiency standards for room air conditioners using HCFC–22. AHAM proposed that second tier of standards would be effective upon the phase-out date of HCFC–22 and would not be available if the HCFC–22 phase out date is not accelerated. (AHAM, No. 1 at 22,23.) Because compressor testing indicates that alternative refrigerant blends will decrease efficiency, Matsushita commented that any efficiency standards promulgated for room air conditioners should apply only to units charged with HCFC–22. (Matsushita, April 7, 1994, Transcript at 91–92.) Frigidaire urged the Department to consider possible energy penalties for HCFC–22 alternative refrigerants. (Frigidaire, No. 544 at 11.) NRDC did not support creating less stringent standards for room air conditioners using alternative refrigerants. NRDC believed that units with new refrigerant alternatives can attain the same efficiency level as units using HCFC–22. NRDC suggested that the Department collaborate with the Environmental Protection Agency on decisions regarding the phase out of HCFCs. Because the Department must promulgate another rulemaking before a phaseout would occur, NRDC stated that the phase out date of HCFC–22 is not within the period of applicability for room air conditioner efficiency standards. It urged that the Department should not plan around a phase out requirement that does not exist. (NRDC, No. 55 at 27,28.) ACEEE stated that alternative refrigerants, such as AZ–20, have been demonstrated to increase room air conditioner efficiency as compared to HCFC–22. (ACEEE, No. 557 at 21.)

In 1996, Fedders stated it has concern over replacement refrigerants. Fedders commented that the Montreal Protocol may require phase-out sooner than the current phaseout date of 2010. Fedders stated that the industry will be required to do extensive retooling if the new standards cannot be met with replacement refrigerants. Furthermore, Fedders stated that the U.S. is ''dangerously close to the legal caps of HCFC chemicals.'' Fedders was concerned ''the EPA will impose restrictions on production, thereby necessitating implementation of replacement refrigerants quickly.'' Therefore, Fedders recommended maintaining the current energy efficiency regulations until the issues related to refrigerant charges are ''resolved and implemented into commerce.'' (Fedders, RAC No. 7 and RAC No. 8.)

In its comments to the 1996 Draft Report, AHAM stated that the issue of replacement refrigerants is a far more serious problem than the Department acknowledges. It states that because of the size restrictions of room air conditioners and because the compressor and condenser are located in a window, the potential adverse effects of high pressure refrigerants are higher, and low pressure alternates demonstrate efficiency penalties. (AHAM, RAC No. 4 at 5.) In February 1997, AHAM requested that the Department make a provision for compliance problems which may result from the transition to HCFC-free refrigerants.

In their comments to the Draft Report, ACEEE and NRDC stated that because the standard set forth in today's rule will cover the 2000–2005 time period, alternative refrigerants will likely be an issue for the next statutorily required standard review but not this review. In addition, the advocates state that it is unlikely for replacement refrigerants to result in an energy penalty and may result in a slight energy efficiency increase. (ACEEE/NRDC, RAC No. At 3.)

The Department agrees that the phase out date of 2010 for HCFC–22 is far enough in the future that no adjustment to these standards is necessary. Replacements for HCFC–22 are being developed. Concerned over the impact that the phase out of HCFC–22 would have on the unitary air conditioner and heat pump industry, the Air Conditioning and Refrigeration Institute initiated the Alternative Refrigerant

[4] The EPA's final rule accelerating the phaseout of ozone-depleting substances bans the production and consumption of virgin HCFC–22 unless it is used as feedstock or in equipment manufactured before January 1, 2010. The final rule also bans the production and consumption of HCFC–22 on January 1, 2020, except for limited exemptions specified by statute. 60 FR 24970 (Wednesday May 10, 1995).

Evaluation Program (AREP). AREP has identified several HCFC–22 alternatives. Two of the more promising replacements include a low-glide ternary blend consisting of HFC–32, HFC–125 and HFC–134a refrigerants, and an azeotrope consisting of H.C.-32 and H.C.-125 refrigerants. A detailed discussion of replacement refrigerants can be found on page 1.18 of the TSD.

Although two of the more promising alternatives demonstrate slight disadvantages compared to R–22, the Department expects that the performance characteristics of the available alternative refrigerant blends will improve as more experience is gained with their use in different formulations. The Department does not anticipate a problem with degradation of performance of refrigerants related to the HCFC–22 phaseout. The EPA states that it does not intend to accelerate the HCFC–22 phaseout. (RAC No. 19.) The Department recognizes the possibility that the phaseout date could be accelerated or the availability of HCFC–22 could diminish. DOE will continue to monitor the situation and take appropriate actions.

Based on this information, the Department declines to establish a two tier system that takes into account a possible degradation in system performance using replacement refrigerants.

Exemption of refrigerant-gas free units. Fedders stated that in order to promote the research and development of alternative air conditioning systems, the Department should exempt refrigerant-gas free room air conditioners from efficiency regulation. (Fedders, April 7, 1994, Transcript at 123.)

The Department will not exempt refrigerant-gas free room air conditioners from efficiency regulation because the energy conservation policies underlying the EPCA do not support such an exemption.

Installation Costs. A few commenters opposed the proposed standard because of increased installation costs. (G&S No. 302 at 2; Amana, No. 347 at 2; Southwestern Public Service Co No. 495 at 5; Whirlpool, No. 391A at 4; CHGEC, No. 601 at 1; and AHAM No. 1 for some classes.)

The Department analyzed the net consumer benefit from the imposition of the standards, estimating costs, including installation costs, and benefits to the utility customer, and concluded that the benefits outweighed the increased costs.

6. Other comments regarding FR Notice of January 29, 1997

Southern Company Services, Inc. stated that these standards appear reasonable and economically justified. (Southern Gas, RAC No. 15 at 1.) ACEEE and NRDC stated that the standards the Department indicated it was inclined to select for the final rule were generally reasonable, and they strongly supported those standards for the first five classes. For the remaining classes, they suggested a few changes which were addressed under ''Efficiency Standards Recommendations.'' (ACEEE/NRDC, RAC No. 14 at 3.) AHAM stated that under two critical conditions, the majority of their members accepted the standard levels the Department indicated it was inclined to select in the January 29 notice. These conditions concerned non-HCFC refrigerants and the effective date of the standards, discussed in the previous section. (AHAM, RAC No. 16 at 1) Glenn Schleede of Energy Market & Policy Analysis, Inc. (EM&PA) stated that the economic analysis is based on outdated and invalid assumptions about potential energy costs. Mr. Schleede's comments dealt specifically with: overestimating national energy cost savings; using total residential electricity cost per kilowatt-hour to calculate national and consumer energy savings; the utility impact model; and the variables and assumptions used in the model. Mr. Schleede believes all calculations of life cycle costs, payback periods, and consumer energy cost savings in the TSD are based on unrealistically high estimates of future energy (particularly electricity) prices. He also believes the Department has not ''taken into account the interests of real consumers.'' (EM&PA, RAC No. 17.)

In the analyses for the Draft Report, the Department utilized EIA forecasts that have not yet addressed the possible price effects of the electric utility regulatory reforms and industry restructuring that are anticipated. Due to this and other uncertainties in electricity price forecasts, the Department conducts sensitivity analyses to bound the possible ranges of impacts. The Department intends to increase the use of sensitivity analyses and scenario analyses in future rulemakings. 61 FR at 36987 (to be codified at 10 CFR Part 430, Subpart C, Appendix A, section 11(e)(1)). The Department will continue to examine how to better account for these changes in the future.

Various cases of Net Present Value (NPV) and life-cycle cost sensitivity to changes in energy price and equipment price were analyzed. These sensitivity analyses are discussed in section IV.c.2., ''Life-cycle Cost and Net Present Value,'' of today's rule. These sensitivity analyses included the effect of using the lowest state energy prices on life-cycle cost and the use of energy price projections provided by the Gas Research Institute to calculate NPV and energy savings.

As a complement to energy price sensitivities, the Department calculated the cost of conserved energy (CCE) for its appliance energy-efficiency standards under consideration. The CCE is the increase in purchase price amortized over the lifetime of the appliance. The advantage of the CCE approach is that it does not require assumptions about future energy prices, because it uses only the purchase expense of the efficiency measure and the expected energy savings. The consumer will benefit whenever the cost of conserved energy is less than the energy price paid by the consumer for that end use. The CCE's calculated for the standards set forth in today's rule are all less than the energy prices projected by either the EIA or GRI. See Supplemental tables 4.10–4.18 in the TSD.

For consumer impacts such as payback and changes in life cycle cost, which are measured at the effective date of the standard, the Department believes both fixed and variable costs should be included because these costs are currently reflected in consumer utility bills based on cost-of-service rates. It is not anticipated that the reductions in energy demand resulting from energy efficiency standards for room air conditioners are likely to have any significant effect on consumer electricity rates (or prices).

In estimating the national net present value of the cost savings resulting from more stringent efficiency standards, it may be appropriate to distinguish between the expected cost impacts on individual consumers and the cost impacts on the nation as a whole. To determine whether there is a significant difference between consumer and national cost impacts, it would be necessary to distinguish between the long run fixed and variable costs of serving residential electricity demand. For example, if electricity demand is reduced, utilities will be able to cut back immediately on the fuel used to generate electricity and, over the long run, should also be able to reduce their power generating, transmission and possibly even their distribution capacity. However, reduced demand is unlikely to affect the cost to a utility of billing and servicing individual

customers. Furthermore, because virtually all consumer electricity rates are still based on average costs and do not reflect the variations in these costs that occur hourly, it is also possible that improving the efficiency of particular appliances will result in significant reductions in the high costs of meeting peak demand or, in other cases, may simply reduce utility base loads (resulting in much lower cost savings). Unfortunately, the Department does not have adequate information upon which to distinguish accurately between consumer cost savings and the cost reductions likely to be experienced by utilities or the nation as a whole. In the absence of such information, the Department believes that its use of retail prices as the basis for calculating the net present value of projected cost savings to the nation (national benefits) is a reasonable approach.

In addition to the impact of energy savings in today's world, there is much speculation as to the impact of electric utility restructuring on future electric rates. However, with federal and state regulations being very undefined, the Department believes it would be pointless to attempt to reflect unknown future electric rate structures in today's analyses. In future rulemakings, the Department will consider such impacts as they become evident. The Department concludes from the information set forth above that it is properly calculating consumer energy cost savings and national net present value.

With regard to the variables and assumptions used in the models, the assumptions regarding discount rates have been discussed extensively, and DOE used the discount rates it determined to be most appropriate. For future rulemakings, the Department always seeks and welcomes the most current information regarding its models and will continue to improve them.

b. General Analytical Comments

This section discusses the general analytical issues raised by the comments to the 1994 Proposed Rule.

The Engineering Analysis identified design options for improvements in efficiency along with the associated costs to manufacturers for each class of product. For each design option, these costs constitute the increased per-unit cost to manufacturers to achieve the indicated energy efficiency levels. Manufacturer, wholesaler, and retailer markups will result in a consumer purchase price higher than the manufacturer cost.

In the analysis which supported the Draft Report, the Department used a computer model that simulates a hypothetical company to assess the likely impacts of standards on manufacturers and to determine the effects of standards on the industry at large. This model, the Manufacturer Analysis Model (MAM), is described in the TSD. (See TSD, Appendix C.) It provides a broad array of outputs, including shipments, price, revenue, net income, and short- and long-run returns on equity. An ''Output Table'' lists values for all these outputs for the base case and for each of the five standard levels analyzed. It also gives a range for each of these estimates. The base case represents the forecasts of outputs with a range of energy efficiencies which are expected if there are no new or amended standards. A ''Sensitivity Chart'' (TSD, Appendix C) shows how returns on equity would be affected by a change in any one of the nine control variables of the model. The Manufacturer Analysis Model consists of 13 modules. The module which estimates the impact of standards on total industry net present value is version 1.2 of the Government Regulatory Impact Model (GRIM), dated March 1, 1993, which was developed by the Arthur D. Little Consulting Company (ADL) under contract to AHAM, the Gas Appliance Manufacturers Association (GAMA), and the Air-Conditioning and Refrigeration Institute (ARI). (See TSD, Appendix C for more details.)

Arthur D. Little, Inc. (ADL) submitted comments on the 1994 Proposed Rule on behalf of AHAM, the Air-Conditioning and Refrigeration Institute (ARI), and the Gas Appliance Manufacturers Association (GAMA.) ADL and others criticized the methodology and analytical models used to assess standards. These comments raised concerns about the determination of the impact of standards on manufacturers, particularly the way the Department used the GRIM developed by industry, and the failure to consider the impact of multiple DOE and other agency regulations. Other analytical issues raised included the determination of consumer paybacks from energy savings, expected life of the product, economic assumptions, the use of prototypical firms, and other assumptions and variables used in the simulation model. (ADL, No. 665 at 1, 8–10, 14-19; AHAM, Transcript April 7, 1994, at 173.) Amana commented that historical models are difficult to construct and that prices fluctuate, and therefore, the Department should not ''place too much stock in computer models.'' Basing its statement on the consumer price index (CPI), producer price index (PPI), and average energy use trends, Amana also stated that there is no evidence to suggest that capital cost increases due to efficiency improvements are passed on to the consumer. (Amana, No. 347 at 2–3.)

In implementing the Process Rule, the Department is now undertaking a review of the manufacturing impact analysis model and methodologies. In developing its new methodology, the Department will take into account the comments received concerning its methodology. However, while DOE is committed to working with the interested public to improve these analytical tools, DOE believes the analytical approach used in conjunction with the Draft Report is a reasonable basis for assessing manufacturer impact.

The Department recognizes that the manufacturers disagreed with the analytical method used in the 1994 Proposed Rule and the Draft Report regarding impacts on manufacturers. However, the Department assumes that the standards recommended by AHAM would not have adverse impacts on the industry or the individual manufacturers. The standards the Department sets forth in today's rule are quite similar to those recommended by AHAM. The Department has selected slightly higher (0.2–0.3 EER) standards than those standards proposed by AHAM for the classes 1 through 4. AHAM's primary concern was the impact of the cost of chassis size increases on manufacturers. The Department took into consideration a graph provided by AHAM which shows the percent of production requiring a chassis size change at each EER level. In selecting the standard levels for classes 1 through 4, the Department, in an effort to mitigate the identified cost impact on manufacturers, was careful to avoid any significant increase in the percentage of production requiring a chassis size change.

ACEEE recommended that DOE compile the best available data on two key variables: markup from manufacturer to the consumer and changes in purchase patterns in response to efficiency-induced price increases. This data should be used for the current analysis in both the Government Regulatory Impact Model (GRIM) and the Manufacturer Impact Model (MIM.) Over the long term, ACEEE suggested that DOE work with industry to co-fund a study on consumer purchase behavior in response to efficiency-induced price increases that would help improve the

usefulness of both GRIM and MIM. (ACEEE, No. 557 at 5.)

DOE has decided to integrate the GRIM with the MIM which has resulted in the development of a new model entitled the Lawrence Berkeley Laboratory Manufacturer Analysis Model (LBL–MAM.) The Department will continue in its efforts to collect the best available data on markups to use in its analytical tools. With regard to consumer response to efficiency-induced price increases, the Department's consumer analysis contains, for each covered product, values that represent the likely response. These values were originally estimated by analyses of data concerning product purchases during the 1970's and have been updated. The Department continues attempting to update its assumptions where updates are warranted and welcomes ACEEE's suggestions. DOE will explore the feasibility of a cooperative study on empirically-verifiable updates on price elasticity.

IV. Analysis of Room Air Conditioner Standards

Revised standards for room air conditioners shall be designed to achieve the maximum improvement in energy efficiency that is technologically feasible and economically justified. These and related statutory criteria are addressed below.

a. Efficiency Levels Analyzed

The Department examined a range of standard levels for room air conditioners. Table 4–1 presents the five efficiency levels selected for analysis in the Draft Report, as well as the supplemental efficiency level. Level 5 corresponds to the highest efficiency level, max tech, considered in the engineering analysis. The Final TSD contains the information analyzed in the Draft Report and the supplemental analysis.

After analyzing the comments received concerning the Draft Report, the Department decided to analyze an additional standard level, defined as the supplemental level. The Department calculated the energy savings, net present value, life-cycle cost, life-cycle cost sensitivity to energy prices, payback period, and environmental emissions reduction for this supplemental standard level. These tables can be found in the Supplemental section of the TSD.

TABLE 4–1.—STANDARD LEVELS ANALYZED FOR ROOM AIR CONDITIONERS

Product class	Level 1	Level 2	Suppl. level	Level 3	Level 4	Level 5
Without reverse cycle, with louvered sides, and less than 6,000 Btu/h	9.32	9.71	9.7	10.00	10.38	11.74
Without reverse cycle, with louvered sides, and 6,000 to 7,999 Btu/h	9.38	9.66	9.7	9.91	10.33	11.67
Without reverse cycle, with louvered sides, and 8,000 to 13,999 Btu/h	9.71	9.85	9.8	10.11	10.97	12.39
Without louvered sides, with reverse cycle, and 14,000 to 19,999 Btu/h	9.70	9.98	9.7	10.15	10.15	12.77
Without reverse cycle, with louvered sides, and 20,000 Btu/h or more	8.39	8.39	8.5	8.51	8.88	11.14
Without reverse cycle, without louvered sides, and less than 6,000 Btu/h	9.10	9.10	9.0	9.23	9.23	11.52
Without reverse cycle, without louvered sides, and 6,000 to 7,999 Btu/h	9.10	9.10	9.0	9.23	9.23	11.52
Without reverse cycle, without louvered sides, and 8,000 to 13,999 Btu/h	8.80	9.05	8.5	9.12	9.12	11.08
Without reverse cycle, without louvered sides, and 14,000 to 19,999 Btu/h	8.80	9.05	8.5	9.12	9.12	11.08
Without reverse cycle, without louvered sides, and 20,000 Btu/h or more	8.80	9.05	8.5	9.12	9.12	11.08
With reverse cycle and with louvered sides	9.05	9.05	9.0	9.27	9.27	11.16
With reverse cycle and without louvered sides	8.72	8.72	8.5	8.86	8.86	10.87

Rather than presenting the results for all classes of room air conditioners in today's rule, the Department selected a class of room air conditioners as being representative, or typical, of the product and is presenting the results only for that class. The results for the other classes can be found in the TSD in the same sections as those referenced for the representative class. The representative class for room air conditioners is units with side louvers, without a reverse cycle, and with a capacity of 8,000–13,999 Btu per hour. This class of room air conditioners has the largest sales volume. For this representative class, trial standard level 1 accomplishes efficiency improvements from the baseline by increasing the compressor EER to 10.8; level 2 adds a subcooler; level 3 adds evaporator and condenser grooved tubing; level 4 increases the evaporator and condenser coil area; and level 5 adds a variable-speed compressor and brushless permanent magnet fan motor. Similar design options are used to achieve the above efficiencies for the other classes and are found tabulated in Section 1.5 of the TSD. The supplemental level was not based on any specific configuration of design options, but rather it resulted from consideration of the comments DOE received regarding the Draft Report. The analysis used in the Draft Report became the basis for the TSD. Consequently, calculations in the TSD and today's rule are based on those energy price forecasts from the 1995 Annual Energy Outlook (AEO) of the Energy Information Administration (EIA) , the current forecast at the time of the analysis, unless otherwise noted. (DOE/EIA–0383(95)). Supplemental calculations were performed where the Department determined it would be appropriate to reflect the most current prices.

The Department believes that all the standard levels it examined are technologically feasible. The only questions which were raised by commenters about technological feasibility pertained to Brushless Permanent Magnetic (BPM) fan motors and variable speed compressors. These

design options were only considered at the most stringent standard levels.

b. Significance of Savings

Under section 325(o)(3)(B) of EPCA, the Department is prohibited from adopting a standard for a product if that standard would not result in ''significant'' energy savings. The Department forecasted energy consumption by the use of the LBL–REM. (See Appendix B of the TSD.) To estimate the energy savings by the year 2030 due to revised standards, the energy consumption of new room air conditioners under the base case is compared to the energy consumption of those sold under the candidate standard levels. For the candidate energy conservation standards, the Lawrence Berkeley Laboratory-Residential Energy Model projects that over the period 1999–2030, the following energy savings would result for all classes of the product:

Level 1—0.36 Quad
Level 2—0.52 Quad
Supplemental Level—0.49 Quad
Level 3—0.69 Quad
Level 4—0.96 Quad
Level 5—0.72 Quad

The preceding values of energy savings use AEO 1995 energy price forecasts; however, calculating the energy savings for the supplemental level using AEO 1997 produces an energy savings of 0.64 Quad.[5]

While the term ''significant'' is not defined in EPCA, the U.S. Court of Appeals for the District of Columbia Circuit concluded that Congress intended the word ''significant'' to mean ''non-trivial.'' *Natural Resources Defense Council* v. *Herrington*. 768 F.2d 1355, 1373 (D.C.Cir. 1985). Thus, for this rulemaking, DOE concludes that each standard level considered results in significant energy savings.

c. Economic Justification

Section 325(o)(2)(B) of EPCA provides seven factors to be evaluated, to the greatest extent practicable, in determining whether a conservation standard is economically justified.

1. Economic Impact on Manufacturers and Consumers

The engineering analysis identified improvements in efficiency along with the associated costs to manufacturers for each efficiency level for each class of product. For each design option, these associated costs constitute the increased per-unit cost to manufacturers to achieve the indicated energy efficiency levels. Manufacturer, wholesaler, and retailer markups will result in a consumer purchase price higher than the manufacturer cost.

To assess the likely impacts of standards on manufacturers and to determine the effects of standards on different-sized firms, the Department used a computer model that simulates hypothetical firms in the industry under consideration. This model, the Manufacturer Analysis Model (MAM), is explained in the TSD. (See TSD, Appendix C.)

For consumers, measures of economic impact are the changes in purchase price, annual energy expense, and installation costs. The purchase price, installation cost, and cumulative annual energy expense, i.e., life-cycle cost, of each standard level are presented in Chapter 3 of the TSD. Under section 325 of the EPCA, the life-cycle cost analysis is a separate factor to be considered in determining economic justification.

The per unit increased costs to manufacturers to meet the efficiency of levels 1–5 for the representative class are $6.11, $8.37, $13.17, $47.09, and $242.52, respectively. The increased per unit cost for the supplemental level falls within the range of $6–$9 for the representative class. See Tables 1.10–1.18 in the TSD.

The consumer price increases for the representative class are estimated to be $11, $15, $23, $82, and $434 for standard levels 1–5, respectively. The consumer price increase for the supplemental level is estimated to be $13. See Tables 4.1–4.9 and Supplemental Tables 4.1–4.9 in the TSD.

The per-unit reduction in annual costs of operation (i.e., energy expense) for the representative class are $2, $3, $4, $8, and $13 for standard levels 1–5, respectively, and $2.5 for the supplemental level. See Tables 4.1–4.9 and Supplemental Tables 4.1–4.9 in the TSD.

The Lawrence Berkeley Laboratory-Manufacturer Impact Model results for all classes of room air conditioners show that revised standards could cause a prototypical manufacturer to have some reductions in short-run return on equity from the 10.9 percent return in the base case. Standard levels 1 through 5 are projected to produce short-run returns on equity of 10.7 percent, 10.6 percent, 10.5 percent, 8.8 percent, and 0.13 percent, respectively. The short-run return on equity for the supplemental level is projected to be in the range of 10.5–10.7 percent. Revised standards have little or no effect on the prototypical manufacturer's long-run return on equity. Standard levels 1 through 5 are projected to produce long-run returns on equity of 10.8 percent, 10.8 percent, 10.8 percent, 10.3 percent, and 7.2 percent, respectively. For the supplemental level the long-run return on equity would also be approximately 10.8 percent. See Tables 5.1 and 5.3 in the TSD.

2. Life-cycle Cost and Net Present Value

One measure of the effect of proposed standards on consumers is the change in life-cycle costs, including recurring operating expenses, the purchase price, and the installation costs resulting from the new standards. The change in life-cycle cost is quantified by the difference in the life-cycle costs between the base case and candidate standard case for each of the product classes analyzed. The life-cycle cost is the sum of the purchase price and the cumulative operating expense, including installation and maintenance expenditures, discounted over the lifetime of the appliance. The life-cycle cost was calculated for the range of efficiencies analyzed in the ''Engineering Analysis'' section of the TSD, for each class, in the year standards are imposed, using real consumer discount rates of six percent.

For the representative class, life-cycle costs at standard levels 1–3 as well as the supplemental level are less than the baseline unit. Standard level 1 would reduce life-cycle costs for the average affected consumer of $6.76 for the representative class of room air conditioner; standard level 2 would reduce average life-cycle costs by $6.67, standard level 3 by $8.48, and the supplemental level by $6.59; for standard levels 4 and 5, the life-cycle costs are projected to increase $19.4 and $328, respectively, compared to the base case. Of the five candidate standard levels, a unit meeting standard level 3 would have the lowest consumer life-cycle cost for the representative class. See Figures 4.4, Tables 4.1–4.18, and Supplemental Tables 4.1–4.18 in the TSD.

The Department's baseline method of analysis[6] calculated costs of increasing

[5] AEO 1995 projected higher energy prices in the future as compared to AEO 1997. Consequently, using AEO 1995 projections, a larger percentage of consumers are projected to purchase higher efficiency room air conditioners in the absence of standards (in the base case), as compared to the base case using AEO 1997 projections. This relative difference results in a larger projected energy savings between the base case and the standards case using AEO 1997 projections as compared to AEO 1995 projections.

[6] The engineering analysis is conducted on the basis of selecting a representative ''baseline'' unit for each room air conditioner product class. The selected ''baseline'' unit is an actual room air conditioner model that has an EER close to the existing minimum efficiency standard and a cooling capacity that is representative of most units in the product class. The physical characteristics of the

chassis size at the standard level at which the baseline required a chassis size change. This analysis produced the preceding values for life-cycle cost. In addition, AHAM provided analysis in which the cost of increasing chassis size was prorated at each standard level. Using this method and the data provided by AHAM (AHAM, RAC No. 9 at Attachment 3A), for classes 1–5, which make up 85 percent of the shipments, the supplemental standard level has the lowest life-cycle cost when prorating chassis size cost.

The Department examined the effect of different discount rates (2, 6, and 15 percent) on the life-cycle cost curves and generally found little impact. See Figures 4.1–4.9 in the TSD. Life-cycle cost sensitivity to changes in energy price and equipment price were analyzed. See Figure 4.10, Table 4.19, and Supplemental Table 4.19 in the TSD. This analysis shows that the life-cycle cost minimums remain unchanged at high energy prices. For low State energy prices, any increase in standard above the baseline, shows a life-cycle cost increase; however, through standard level 3, this increase is less than $3 (and approximately $1 for the standards in today's rule).

As previously addressed under Discussion of Comments, the Department also calculated life cycle costs and paybacks using energy prices calculated by the Gas Research Institute (GRI). (See the Supplemental Sensitivity Analysis subsection of the TSD.) The life-cycle minimums resulting from the GRI projections remain unchanged from the analysis using the AEO price forecasts. The payback periods increase slightly, using the GRI forecasts, but remain well within the expected lifetime of the product.

The Net Present Value analysis, a measure of the net savings to society, indicates that for all classes of room air conditioners, standard level 1 would produce an NPV of $0.40 billion to consumers. The corresponding net present values for standard levels 2–5 are $0.54 billion, $0.59 billion, $−0.26 billion, and $−10.9 billion, respectively (based on AEO 1995 energy price projections). See Table 3.6 in the TSD. The NPV for the supplemental level is $0.51 billion using AEO 1995, for basis of comparison. Using AEO 1997 data, the NPV of the supplemental level is calculated to be $0.45 billion. See the Supplemental Sensitivity Analysis subsection of the TSD.

A sensitivity analysis was also conducted for energy savings and Net Present Value (NPV), using GRI forecasts for the following cases: the GRI fuel price projection, low equipment price, high equipment price, and high efficiency trend. (See the Supplemental Sensitivity Analysis subsection of the TSD.) The results of this analysis show that although the NPV and energy savings change in each scenario, both the NPV and the energy savings remain positive, indicating an overall benefit to the consumer and the nation.

3. Energy Savings

EPCA requires DOE to consider the total projected energy savings that result from revised standards. The Department forecasted energy consumption through the use of the LBL–REM. (See Appendix B of the TSD for a detailed discussion of the LBL–REM.) The projected savings using AEO 1997 is 0.64 Quad for the supplemental level. See Supplemental Table 3.97 in the TSD. Also, see section IV.c. in today's rule for the energy savings of the other efficiency levels.

4. Lessening of Utility or Performance of Products

In establishing classes of products and design options, the Department tried to eliminate consideration of any design option that would result in degradation of utility or performance. Thus, a separate class with a different efficiency standard was created for a product where the record indicated that the product included a utility or performance-related feature that affected energy efficiency. For example, the Department added classes for casement-only and casement-slider room air conditioners. These room air conditioners offer the unique utility of fitting into slider and casement windows. In this way, the Department attempted to minimize the impact of amended standards on the utility and performance of room air conditioners.

5. Impact of Lessening of Competition

The Energy Policy and Conservation Act directs the Department to consider the impact of any lessening of competition that is likely to result from the standards, as determined by the Attorney General.

In a letter dated September 16, 1994, the Department of Justice (DOJ) expressed concern about the effects the standards proposed in the 1994 Proposed Rule might have on industry. DOJ stated that there was evidence that some of the design options suggested in the 1994 Proposed Rule were less effective and more costly than the TSD indicated and that manufacturers may, among other things, need to redesign the chassis of some classes to comply with the standard. DOJ concluded that such redesigns could add to unit installation costs, make units larger and more cumbersome to install, and otherwise depress demand. Furthermore, DOJ noted evidence that at least one product, the five thousand Btu/h unit, may cease to be manufactured if the standard proposed in 1994 were adopted. DOJ was also concerned about the availability and efficacy of some design options suggested in the TSD for the Proposed Rule. DOJ concluded that the proposed standard could have a substantial negative impact on demand and rates of return, and could cause one or more firms to cease the manufacture and sale of some of these products, thus lessening competition. (DOJ, No. 840 at 5.) The September 16, 1994, letter is printed at the end of today's rule.

The Department of Justice comments were based on the standards proposed in the 1994 Proposed Rule. The revised analysis contained in the 1996 Draft Report and the supplemental analysis, and commented upon by the public, addressed many of the concerns raised by DOJ. The standards promulgated in today's final rule have been adjusted from the proposed standards in order to mitigate the types of concerns raised by DOJ. For example, the Final Rule sets the same standard level for class 1 as for class 2, addressing the concern that class 1 units would be eliminated from the marketplace as a result of the revised standards. The Department's revised analysis addressed concerns about the installation costs and chassis size increases, and the standards in the Final Rule reflect this revised analysis. The manufacturing impact analysis shows no significant shifts in manufacturer rates of return under the supplemental standards level. Thus, the Department of Energy concludes that the concerns raised by the DOJ have been addressed, and DOE does not expect competition to be negatively impacted by this final rule.

6. Need of the Nation to Save Energy

Enhanced energy efficiency improves the Nation's energy security, strengthens the economy, and reduces the environmental impacts of energy production. In 1997, 3.4 percent of residential sector electricity consumption (corresponding to 0.38

''baseline'' unit (e.g., compressor efficiency and heat exchanger design) dictate which design options can be considered to improve its efficiency and at what rate the manufacturer cost will be increased. The selected ''baseline'' unit's physical make-up is known not to be representative of all minimum efficiency equipment in its product classes. But because its EER and capacity are representative, it is assumed that the design options that are added to improve its efficiency will yield a manufacturer cost vs. efficiency relationship that is representative of all ''baseline'' units in the product class, irrespective of physical design.

quad source energy) was accounted for on a national basis by room air conditioners. The Department estimates that over 30 years the revised standards will save approximately 0.64 quads of primary energy.

7. Other Factors

Decreasing future electricity demand by means of standards will decrease air pollution. Standards will result in a decrease in nitrogen dioxide (NO_x) emissions. For standard levels 1–5, over the years 2000 to 2030, the total estimated NO_x emission reduction would be 55,000 tons; 80,000 tons; 104,000 tons; 141,000 tons; and 60,000 tons, respectively. For the supplemental level the reduction is estimated at 74,000 tons using the AEO 1995 energy prices and 95,000 tons using AEO 1997 energy prices. See Tables 7.1–7.5 and Supplemental Tables 7.6 and 7.7 in the TSD.

d. Payback Period

Another consequence of the standards will be the reduction of carbon dioxide (CO_2) emissions. For standard level 1, over the years 2000 to 2030, the total estimated CO_2 emission reduction would be 30 million tons. For standard levels 2–5, the reductions would be 44 million tons; 57 million tons; 79 million tons; and 55 million tons, respectively. For the supplemental level the reduction is estimated at 41 million tons using AEO 1995 energy prices and 54 million tons using AEO 1997. See Tables 7.1—7.5 and Supplemental Tables 7.6 and 7.7 in the TSD.

Energy associated with these standards would also reduce the costs associated with SO_2 compliance.[7] See Tables 7.1—7.5 and Supplemental Tables 7.6 and 7.7 in the TSD.

[7] Decreases in SO_2 emissions will not occur because the Clean Air Act places a ceiling on SO_2 emissions that will be met under any regulatory regime. In the case of SO_2 therefore, the emissions reductions should be interpreted as reduced costs to electricity generators for controlling SO_2. For all classes of room air conditioners, over the years 2000 to 2030, the estimated need to control SO_2 is estimated to be reduced by 59,000 tons; 86,000 tons; 111,000 tons; 149,000 tons; and 43,000 tons, for levels 1–5, respectively. For the supplemental level the reduction is estimated at 79,000 tons. However, using AEO 1997, the reduction is estimated at 100,000 tons. This reduced need to control emissions will be reflected in lower costs of pollution control at utilities or lower price allowances.

If the increase in initial price of an appliance due to a conservation standard would repay itself to the consumer in energy savings in less than three years, then it is presumed that such standard is economically justified.[8] EPCA, Section 325(o)(2)(B)(iii), 42 U.S.C. 6295(o)(2)(B)(iii). This presumption of economic justification can be rebutted upon a proper showing. Failure to qualify for this presumption shall not be taken into consideration in determining whether a standard is economically justified. *Id.*

[8] For this calculation, the Department calculated cost-of-operation based on the DOE test procedures. Therefore, the consumer is assumed to be an ''average'' consumer as defined by the DOE test procedures. Consumers who use the products less than the test procedure assumes will experience a longer payback while those who use them more than the test procedure assumes will have a shorter payback.

Table 4.2 presents the payback periods[9] for the efficiency levels analyzed for the representative class of the product. For this representative class, none of the standard levels satisfy the rebuttable presumption test. Standard level 4 meets the rebuttable presumption criteria for classes 4 and 12. Standard level 3 meets the rebuttable presumption criteria for classes 1, 4 and 12. The standards set forth in today's rule meet the rebuttable presumption criteria for classes 1, 2, 4, 8–10, and 12. Payback periods for all classes of room air conditioners may be found in Tables 4.10—4.18 and Supplemental Tables 4.10—4.18 in the TSD.

[9] These payback periods are weighted averages. They compare the portion of the projected distributions of designs in the base case that are less efficient than the standard level to the design at the standard level. Designs with energy consumption at or below the standard level are not affected by the standard and are excluded from the calculation of impacts.

TABLE 4–2.—PAYBACK PERIODS OF DESIGN OPTIONS (YEARS) FOR THE REPRESENTATIVE CLASS OF ROOM AIR CONDITIONERS

Standard level	Payback period
1	3.8
2	3.9
Supplemental	3.8

[10] This value was calculated using AEO 1997 and factoring in the offset from the increased use of central air conditioners and heat pumps.

[10] This value was calculated using AEO 1997 and factoring in the offset from the increased use of central air conditioners and heat pumps.

[10] This value was calculated using AEO 1997 and factoring in the offset from the increased use of central air conditioners and heat pumps.

[10] This value was calculated using AEO 1997 and factoring in the offset from the increased use of central air conditioners and heat pumps.

TABLE 4–2.—PAYBACK PERIODS OF DESIGN OPTIONS (YEARS) FOR THE REPRESENTATIVE CLASS OF ROOM AIR CONDITIONERS—Continued

Standard level	Payback period
3	4.2
4	8.3
5	27.2

e. Conclusion

1. *Additional Product Classes.* The Department has added four new product classes. First, the Department is adding two classes for casement-type units because of the unique utility they offer the consumer. The size limitations imposed on casement-type units are more significant than the limitations of typical units designed for double-hung windows, and the performance-related feature (fitting into casement windows) justifies a lower efficiency standard. The two additional product classes for casement units are casement-only units and casement-slider units. In today's rule, definitions for these terms are being added to Section 430.2 Subpart A of 42 U.S.C. 6291–6309. For today's rule, the Department has selected the efficiency standard recommended by AHAM, ACEEE, and NRDC for casement-slider units (9.5 EER) (AHAM, RAC No. 6 at 2 and ACEEE/NRDC, RAC No. 5 at 5) and the standard recommended by AHAM for casement-only units (8.7 EER). (AHAM, RAC No. 6 at 2.)

Second, the Department is splitting each of two classes for reverse cycle units into two classes. Splitting of these two classes accommodates the concerns expressed in public comments. The class of units with a reverse cycle and louvered sides is split between capacities of less than 20,000 Btu/h (class 11) and 20,000 Btu/h or more (new class 13). The class of units with reverse cycle and without louvered sides is split between capacities of less than 14,000 Btu/h (class 12) and capacities of 14,000 Btu/h or more (new class 14).

2. *Standards.* Section 325(o)(2)(A) of the Act specifies that the Department must establish standards that ''achieve the maximum improvement in energy efficiency which the Secretary determines is technologically feasible and economically justified.'' EPCA, section 325(o)(2)(A). Technologically feasible design options are ''technologies which can be incorporated in commercial products or in working prototypes.'' 10 CFR part 430, Appendix A to Subpart C, 4(a)(4)(I).

A standard level is economically justified if the benefits exceed the burdens. EPCA, section 325(o)(2)(B)(I).

A maximum technologically feasible (max tech) design option was identified for each class of room air conditioners. The max tech levels were derived by adding energy-conserving engineering design options to the baseline units for each of the respective classes in order of decreasing consumer payback. The max tech level includes higher efficiency fan motors, which were added as one of the first design options, and variable speed compressors, which were added as one of the last design options because of their slower payback. A complete discussion of each max tech level, and the design options included in each, is found in the *Engineering Analysis* in the TSD, Chapter 3.

Table 5–1 presents the max tech performance levels for all classes of the subject product:

TABLE 5–1.—MAXIMUM TECHNOLOGICALLY FEASIBLE STANDARD LEVELS FOR ROOM AIR CONDITIONERS EXPRESSED IN ENERGY EFFICIENCY RATIO

Product class	Energy efficiency ratio
Without reverse cycle, with louvered sides, and less than 6,000 Btu/h	11.7
Without reverse cycle, with louvered sides, and 6,000 to 7,999 Btu/h	11.7
Without reverse cycle, with louvered sides, and 8,000 to 13,999 Btu/h	12.4
Without reverse cycle, with louvered sides, and 14,000 to 19,999 Btu/h	12.8
Without reverse cycle, with louvered sides, and 20,000 Btu/h or more	11.1
Without reverse cycle, without louvered sides, and less than 6,000 Btu/h	11.5
Without reverse cycle, without louvered sides, and 6,000 to 7,999 Btu/h	11.5
Without reverse cycle, without louvered sides, and 8,000 to 13,999 Btu/h	11.1
Without reverse cycle, without louvered sides, and 14,000 to 19,000 Btu/h	11.1
Without reverse cycle, without louvered sides, and 20,000 Btu/h or more	11.1
With reverse cycle and with louvered sides	11.2
With reverse cycle and without louvered sides	10.9

Accordingly, the Department first considered the max tech level of efficiency, i.e., standard level 5. Of the standard levels analyzed, level 5 would save the most energy (4.1 quads between 1999 and 2030.) However, because many consumers would not purchase room air conditioners due to the high first cost associated with this standard level, purchases of central air conditioners and heat pumps will increase, resulting in a reduction of savings for room air conditioners. After accounting for this offset, the net savings is 0.72 quad. Also, in order to meet this standard, the Department assumes that all room air conditioners would incorporate larger and improved heat transfer devices in addition to high efficiency, variable-speed fan motors and compressors. However, at this standard level, the payback period of 27 years for the representative class, and up to 107 years for other classes, exceeds the 12.5-year life of the product. The life-cycle cost increases are $328 for the representative class and up to $911 for other classes. This level also drives the short-run manufacturer return on equity from 10.9 percent to 0.13 percent. The Department therefore concludes that the burdens of standard level 5 for room air conditioners outweigh the benefits and that this standard level is not economically justified, and thus the Department rejects the standard level.

The next most stringent standard level is standard level 4. This standard level is projected to save 1.34 quads of energy. However, many consumers would not purchase room air conditioners due to the high first cost associated with this standard level, resulting in increased purchases of central air conditioners and heat pumps and a reduction of savings for room air conditioners. After accounting for this offset, the savings are 0.96 quad. For the representative class this level produces a life-cycle cost increase of $19 compared to the base case. Classes 4 and 12 meet the rebuttable presumption criteria. However, the payback period for the representative class is 8.3 years, with payback periods of up to 10.6 years for the other classes (80 percent of the average product lifetime of 12.5 years). This level also reduces manufacturer short-run return on equity from 10.9 percent to 8.8 percent, a reduction of nearly 20 percent. The Department therefore, concludes that the burdens of standard level 4 for room air conditioners outweigh the benefits and that this standard level is not economically justified, and thus the Department rejects the standard level.

The next most stringent standard level is standard level 3. Standard level 3 is projected to save 0.79 quad of energy. After accounting for the increased use of central air conditioners and heat pumps, the savings become 0.69 quad. For the representative class, the analysis shows this level produces a life-cycle cost decrease of $8.5 compared to the base case and a payback of 4.2 years. This standard level meets the rebuttable presumption criteria for classes 1, 4 and 12. The manufacturer impact analysis for this level shows a manufacturer short-run return on equity reduction from 10.9 percent to 10.5 percent. Although the feedback generated from the LBL-MAM indicated acceptable manufacturer impact, the comments received from manufacturers on the 1996 Draft Report indicated burdens to manufacturers which were not identified by the model. The Department believes these impacts must be considered. A class-specific approach was taken to consider these impacts.

For classes 1 through 5, the manufacturers disagreed with the Department's baseline method of analysis wherein, for each class, a specific model was simulated for improvement up to and including a chassis size change, when necessary for that model. AHAM commented that this method does not adequately account for the cost of increasing chassis size. AHAM believes the cost of increasing chassis size should be prorated for each efficiency level analyzed, because at each efficiency improvement, some models within each class would need to undergo a chassis size change, even though the specific model being analyzed did not necessarily need a chassis size change. AHAM provided the Department with a graph depicting the percent of production required to change chassis size at each standard level for each of the first five classes. (AHAM, No, 1 at 14.) AHAM calculates that efficiency level 3 would require 39 percent of production to move to a larger chassis size. However, because the baseline method of analysis does not prorate the cost at each level, the impact of 39 percent of production requiring a

larger chassis is not considered by the model. (AHAM, No. 4 at 3.)

For classes 6 through 12, AHAM argues that because the engineering simulation model was designed using units with louvered sides and without a reversing valve, the simulation does not provide a good simulation for units without louvers or units with a reversing valve. AHAM commented that this inaccuracy understates the extreme differences between the air flow patterns on the condenser side of units with and without louvers, as well as the refrigeration circuit restrictions caused by the reversing valve and concessions made to balance both cooling and heating in one unit. As addressed in section III, ''Discussion of Comments,'' manufacturers emphasize that increasing the standards could eliminate higher capacity models from the market due to the impracticality of increasing the chassis size for these units. (AHAM, RAC No. 4 at 3–4.)

For these reasons, the Department concludes the burdens of standard level 3 outweigh the benefits and that the standard level is not economically justified, and thus, the Department rejects this standard level.

Based on the comments received regarding the 1996 Draft Report, the Department next considered a supplemental efficiency level. The comments the Department received in response to its 1996 Draft Report contained recommended standards from AHAM and from ACEEE and NRDC. These recommended standards fell in the range between efficiency levels 1, 2 and 3, depending on the product class.

For classes with louvered sides and without a reversing valve, ACEEE and NRDC recommended 10.0 EER for the first four classes, while AHAM recommended 9.5 EER for the first four classes. For class 5, all three organizations supported an 8.5 EER. AHAM calculated the life cycle costs when prorating the cost of increasing the chassis size for each of the efficiency levels. The life cycle cost minimums fell in the 9.7–9.8 range for the first four classes and 8.5 EER for class 5. The Department concluded that these life-cycle cost minimums should be considered in the supplemental efficiency level.

For classes without louvered sides and without a reverse cycle, the Department also received comments and recommendations for efficiency standards. For most of these classes, both AHAM and the efficiency advocates agreed upon standard levels. Consequently, these levels were selected for the Department's supplemental efficiency level. For class 8, upon which AHAM and the efficiency advocates had differing recommendations, the Department concluded, after analyzing the AHAM Directory, that there is evidence that increasing standards for units without louvers and without reverse cycle may result in eliminating higher capacity units from the market. Thus, the Department chose 8.5 EER for this class.

For classes with a reverse cycle, the Department again took the comments and recommendations it received into consideration in adding and establishing efficiency levels to examine as part of the supplemental efficiency level. In response to public comment, the Department split the two classes for reverse cycle units in order to address the concerns of AHAM, ACEEE, and NRDC.

After carefully considering the analysis, the Department is amending the existing statutory standard for room air conditioners with the supplemental standard level for room air conditioners. The Department concludes that the supplemental standard level for room air conditioners saves a significant amount of energy and is designed to be technologically feasible and economically justified.

This level of efficiency will result in significant energy savings. During the period 2000—2030, these savings are calculated to be 0.64 quad [10] of primary energy. In addition, the standard is expected to have a positive effect on the environment by reducing the emissions of NO_X and CO_2 by 95,000 tons and 54 million tons, respectively.

The technologies that are necessary to meet this standard are presently available. The Department finds this level to be economically justified. The consumer payback of this standard level is 3.8 years for the representative class and no more than 5 years for any class. This standard is at or close to the lowest life-cycle cost for all classes and is expected to result in a reduction in life-cycle cost of approximately $6.6 for the representative class and up to $23 for the other classes. Additionally, the standard is expected to have a small impact on the prototypical manufacturer's short run return on equity and no impact on their long run return on equity, as calculated by the Department. Furthermore, the efficiency levels are reasonably close to the standards recommended by AHAM, which presumably reflect acceptable manufacturer impacts. Although stakeholder consensus was not reached, the public comments converged following the reanalysis, meetings with stakeholders, and the notice reopening the comment period. The efficiency levels selected for today's rule fall within the small range of difference between the stakeholder recommendations. These efficiency levels address the concerns raised by the Department of Justice with regard to the standards in the 1994 Proposed Rule. In addition, since this standard does not involve substantial redesign or retooling, the Department expects that it will not have negative impacts on smaller competitors. Moreover, for classes 1, 2, 4, 8–10, and 12 there is a payback period of less than 3 years and thus a presumption of economic justification. For these reasons, DOE concludes that these standard levels are economically justified and thus promulgates them as revisions to the existing standards.

[10] This value was calculated using AEO 1997 and factoring in the offset from the increased use of central air conditioners and heat pumps.

V. Procedural Issues and Regulatory Review

a. Review Under the National Environmental Policy Act

In issuing the proposed rule, the Department prepared an Environmental Assessment (EA) (DOE/EA–0819) that was published within the Technical Support Document for the Proposed Rule. (DOE/EE–0009, November 1993.) The environmental effects associated with various standard levels were not found to be significant, and a Finding of No Significant Impact (FONSI) was published. 59 FR 15868 (April 5, 1994).

In conducting the analysis for the final rule, the Department evaluated several design options suggested in comments on the proposed rule. As a result, the energy savings estimates and resulting environmental effects in the final rule differ somewhat from those presented in the proposed rule. For example, by the year 2030, the reductions in nitrogen dioxide (NO_2) and carbon dioxide (CO_2) emissions from the standard on room air conditioners are expected to be 95,000 tons and 54,000,000 tons respectively. The environmental effects expected from the final rule fall within ranges of environmental impacts that DOE found in the FONSI not to be significant.

b. Review Under Executive Order 12866, ''Regulatory Planning and Review''

Today's regulatory action has been determined to be an ''economically significant regulatory action'' under Executive Order 12866, ''Regulatory Planning and Review.'' 58 FR 51735 (October 4, 1993.) Accordingly, today's action was subject to review under the

Executive Order by the Office of Information and Regulatory Affairs (OIRA).

Pursuant to E.O. 12866, DOE prepared a draft regulatory analysis. Six major alternatives were identified by DOE as representing feasible policy alternatives for achieving consumer product energy efficiency. Each alternative was evaluated in terms of its ability to achieve significant energy savings at reasonable costs and has been compared to the effectiveness of the rule. 59 FR 10464, 10525–6 (March 4, 1994.) No new data has been received concerning this review, and no substantive changes have been made to this action since the review of the draft by OIRA. The non-regulatory alternatives analyzed in the draft Regulatory Analysis were evaluated for the eight products in aggregate. None of the alternatives analyzed saved as much energy as the standards in the Proposed Rule. The Department believes that the non-regulatory alternatives for each product would have energy savings proportional to the savings for all eight products. Therefore, the Department concludes that non-regulatory alternatives are not likely to meet or exceed the energy savings expected from the standards set forth in today's rule.

c. Review Under the Regulatory Flexibility Act

The Regulatory Flexibility Act, 5 U.S.C. 601 *et seq.*, requires an assessment of the impact of regulations on small businesses unless an agency certifies that the rule will not have a significant economic impact on a substantial number of small businesses and other small entities. To be considered a small business, a manufacturer of room air-conditioners and its affiliates may employ a maximum of 750 employees. (Small Business Administration size standards, 61 FR 3280.) In the notice of proposed rulemaking, DOE certified pursuant to section 605(b) of the Regulatory Flexibility Act that the proposed action would not have a ''significant economic impact on a substantial number of small entities,'' and, thus, a regulatory flexibility analysis was not prepared.

The Department has not identified any firms that both manufacture room air conditioners covered by EPCA, and have, together with their affiliates, 750 or fewer employees. The Department estimates there are approximately nine domestic firms and six foreign firms that manufacture room air conditioners covered under EPCA, with three domestic companies holding approximately 70 percent of U.S. room air conditioner sales. Many room air conditioner manufacturers are affiliated with larger U.S. or foreign firms which manufacture full product lines of home appliances.

DOE's notice of proposed rulemaking elicited no public comments on the economic impact of the proposed rule on small businesses. One commenter did criticize the Manufacturer Impact Model (MIM) and claimed that the model is inadequate for estimating the impact of standards on small firms. The comment was not supported by any data to cause the Department to conclude that this final rule would have a significant impact on small businesses subject to the regulation.

Today's final rule contains less stringent room air conditioner energy efficiency standards than the proposed rule. The final rule establishes standards in a range from 8.0 to 9.8 EER, and it would add four new product classes to accommodate room air conditioners with and without side louvers and reverse cycle as well as casement room air conditioners. These changes in the final rule will significantly reduce any potential economic impact of the rule on small businesses. Therefore, DOE certifies that this final rule will not have a significant economic impact on a substantial number of small entities.

d. Review Under the Paperwork Reduction Act

No new information or record keeping requirements are imposed by this rulemaking. Accordingly, no Office of Management and Budget clearance is required under the Paperwork Reduction Act. 44 U.S.C. 3501 *et seq.*

e. Review Under Executive Order 12988, ''Civil Justice Reform''

With respect to the review of existing regulations and the promulgation of new regulations, section 3(a) of Executive Order 12988, ''Civil Justice Reform,'' 61 FR 4729 (February 7, 1996), imposes on Executive agencies the general duty to adhere to the following requirements: (1) Eliminate drafting errors and ambiguity; (2) write regulations to minimize litigation; and (3) provide a clear legal standard for affected conduct rather than a general standard and promote simplification and burden reduction. With regard to the review required by section 3(a), section 3(b) of Executive Order 12988 specifically requires that Executive agencies make every reasonable effort to ensure that the regulation: (1) Clearly specifies the preemptive effect, if any; (2) clearly specifies any effect on existing Federal law or regulation; (3) provides a clear legal standard for affected conduct while promoting simplification and burden reduction; (4) specifies the retroactive effect, if any; (5) adequately defines key terms; and (6) addresses other important issues affecting clarity and general draftsmanship under any guidelines issued by the Attorney General. Section 3(c) of Executive Order 12988 requires Executive agencies to review regulations in light of applicable standards in section 3(a) and section 3(b) to determine whether they are met or it is unreasonable to meet one or more of them. DOE reviewed today's final rule under the standards of section 3 of the Executive Order and determined that, to the extent permitted by law, the final regulations meet the relevant standards.

f. ''Takings'' Assessment Review

It has been determined pursuant to Executive Order 12630, ''Governmental Actions and Interference with Constitutionally Protected Property Rights,'' 52 FR 8859 (March 18, 1988) that this regulation would not result in any takings which might require compensation under the Fifth Amendment to the United States Constitution.

g. Federalism Review

Executive Order 12612, ''Federalism,'' 52 FR 41685 (October 30, 1987) requires that regulations, rules, legislation, and any other policy actions be reviewed for any substantial direct effect on States, on the relationship between the Federal Government and the States, or on the distribution of power and responsibilities among various levels of government. If there are substantial direct effects, then Executive Order 12612 requires preparation of a federalism assessment to be used in all decisions involved in promulgating and implementing a regulation or a rule.

The Department finds that this final rule will not have a substantial direct effect on State governments. State regulations that may have existed on the products that are the subject of today's rule were preempted by the Federal standards established in EPCA. States can petition the Department for exemption from such preemption based on criteria set forth in EPCA. None has done so. Accordingly, the Department finds that the preparation of a federalism assessment for this rulemaking is not warranted.

h. Review Under the Unfunded Mandates Reform Act

With respect to a proposed regulatory action that may result in the expenditure by the private sector of $100 million or more (adjusted annually for inflation), section 202 of the

Unfunded Mandates Reform Act of 1995 (UMRA) requires a Federal agency to publish estimates of the resulting costs, benefits and other effects on the national economy. 2 U.S.C. 1532(a), (b). Section 202 of UMRA authorizes an agency to respond to the content requirements of UMRA in any other statement or analysis that accompanies the proposed rule. 2 U.S.C. 1532(c).

The content requirements of section 202(b) of UMRA relevant to a private sector mandate substantially overlap the economic analysis requirements that apply under section 325(o) of EPCA and Executive Order 12866. The Supplementary Information section of the notice of proposed rulemaking and ''Regulatory Impact Analysis'' section of the TSD for the 1994 Proposed Rule responded to those requirements.

Under section 205 of UMRA, the Department is obligated to identify and consider a reasonable number of regulatory alternatives before promulgating a rule for which a written statement under section 202 is required. DOE is required to select from those alternatives the most cost-effective and least burdensome alternative that achieves the objectives of the rule unless DOE publishes an explanation for doing otherwise or the selection of such an alternative is inconsistent with law. As required by section 325(o) of the Energy Policy and Conservation Act (42 U.S.C. 6295(o)), this final rule establishes energy conservation standards for room air conditioners that are designed to achieve the maximum improvement in energy efficiency which DOE has determined to be both technologically feasible and economically justified. A full discussion of the alternatives considered by DOE is presented in the ''Regulatory Impact Analysis'' section of the TSD for the 1994 Proposed Rule.

i. Review Under the Small Business Regulatory Enforcement Fairness Act of 1996

Consistent with Subtitle E of the Small Business Regulatory Enforcement Fairness Act of 1996, 5 U.S.C. 801–808, DOE will submit to Congress a report regarding the issuance of today's final rule before the effective date set forth at the outset of this notice.

List of Subjects in 10 CFR Part 430

Administrative practice and procedure, Energy conservation, Household appliances.

Issued in Washington, D.C., on September 12, 1997.

Joseph J. Romm,

Acting Assistant Secretary, Energy Efficiency and Renewable Energy.

For the reasons set forth in the preamble Part 430 of Chapter II of Title 10, Code of Federal Regulations, is amended as set forth below.

Part 430—ENERGY CONSERVATION PROGRAM FOR CONSUMER PRODUCTS

1. The authority citation for Part 430 continues to read as follows:

Authority: 42 U.S.C. 6291–6309.

2. Section 430.2 of Subpart A is amended by adding new definitions for ''Casement-only room air conditioner'' and ''Casement-slider room air conditioner'' in alphabetical order, to read as follows:

Subpart A—General Provisions

§ 430.2 Definitions.

* * * * *

Casement-only means a room air conditioner designed for mounting in a casement window with an encased assembly with a width of 14.8 inches or less and a height of 11.2 inches or less.

Casement-slider means a room air conditioner with an encased assembly designed for mounting in a sliding or casement window with a width of 15.5 inches or less.

* * * * *

3. Section 430.32 is amended by revising paragraph (b) to read as follows:

§ 430.32 Energy conservation standards and effective dates.

* * * * *

(b) *Room air conditioners.*

Product class	Energy efficiency ratio, effective as of	
	Jan. 1, 1990	Oct. 1, 2000
1. Without reverse cycle, with louvered sides, and less than 6,000 Btu/h	8.0	9.7
2. Without reverse cycle, with louvered sides, and 6,000 to 7,999 Btu/h	8.5	9.7
3. Without reverse cycle, with louvered sides, and 8,000 to 13,999 Btu/h	9.0	9.8
4. Without reverse cycle, with louvered sides, and 14,000 to 19,999 Btu/h	8.8	9.7
5. Without reverse cycle, with louvered sides, and 20,000 Btu/h or more	8.2	8.5
6. Without reverse cycle, without louvered sides, and less than 6,000 Btu/h	8.0	9.0
7. Without reverse cycle, without louvered sides, and 6,000 to 7,999 Btu/h	8.5	9.0
8. Without reverse cycle, without louvered sides, and 8,000 to 13,999 Btu/h	8.5	8.5
9. Without reverse cycle, without louvered sides, and 14,000 to 19,999 Btu/h	8.5	8.5
10. Without reverse cycle, without louvered sides, and 20,000 Btu/h or more	8.2	8.5
11. With reverse cycle, with louvered sides, and less than 20,000 Btu/h	8.5	9.0
12. With reverse cycle, without louvered sides, and less than 14,000 Btu/h	8.0	8.5
13. With reverse cycle, with louvered sides, and 20,000 Btu/h or more	8.5	8.5
14. With reverse cycle, without louvered sides, and 14,000 Btu/h or more	8.0	8.0
15. Casement-Only	*	8.7
16. Casement-Slider	*	9.5

*Casement-only and casement-slider room air conditioners are not separate product classes under standards effective January 1, 1990. These units are subject to the applicable standards in classes 1 through 14 based on unit capacity and the presence or absence of louvered sides and a reverse cycle.

* * * * *

Note: The following letter will not appear in the Code of Federal Regulations.

September 16, 1994

Honorable Christine A. Ervin

Assistant Secretary for Energy Efficiency and Renewable Energy

United States Department of Energy, Forrestal Building, 1000 Independence Ave., S. W., Washington, D.C. 20585

Dear Ms. Ervin:

By letter dated March 14, 1994, the Department of Energy (''DOE'') transmitted to the Attorney General a Notice of Proposed Rulemaking (59 FR 10464) addressing energy

standards for eight classes of household appliances. Those classes are: room air conditioners, water heaters, direct heating equipment, mobile home furnaces, kitchen ranges and ovens, pool heaters, fluorescent lamp ballasts and television sets. Section 325 of the Energy Policy and Conservation Act, as amended in 1992 (42 U.S.C. 6295) (''the Act''), requires the Attorney General to determine the impact, if any, of any lessening of competition likely to result from the proposed standards. This letter contains the competitive impact determination of the Department of Justice (''Department'').

Summary

The evidence available to the Department does not indicate that any significant lessening of competition is likely to result from the imposition of the proposed standards for mobile home furnaces and pool heaters contained in the Notice. For television sets, fluorescent lamp ballasts and professional-style or high-end kitchen ranges it is the Department's judgement based on the available evidence that significant anticompetitive effects are likely to occur. For electric water heaters the evidence indicates that a significant anticompetitive effect could take place if sufficient time is not permitted firms to develop, produce and market products complying with the new standard. For microwave ovens, oil-fired water heaters, room air conditioners, and direct heating equipment the evidence indicates that anticompetitive effects could result; the Department is unable on the basis of the available evidence to determine whether such effects are likely. Finally, the evidence indicates that the cumulative effects of these and other regulatory standards could be to lessen competition in certain markets for household appliances.

In preparing these comments the Department has considered the Notice, the Technical Support Document (TSD) prepared by Lawrence Berkeley Laboratory, written comments and oral comments collected by the department in the time allowed and without the benefit of compulsory process.

Discussion

Adoption of standards requiring greater energy efficiency in household appliances could affect competition in a number of ways. First, by raising the cost of appliances and reducing design and feature choices, standards may lower demand. If standards impose costs on manufacturers that can not be passed to consumers they can lower manufacturers' rates of return. Either one or both of these effects could cause manufacturers to exit the market with the effect of lessening competition and raising prices. Second, imposition of standards may lessen or discourage competition in the design and development of new product features or technologies; such competition benefits consumers and the economy.

The record in this proceeding raises many factual issues relating, among other things, to the technical feasibility of certain standards, their economic impact on manufacturers and consumers and consumer reaction to the changes in products that they might require. In numerous instances, industry representatives and technical consultants retained by them have challenged assumptions and conclusions in the Notice and TSD. The Department is not in a position to resolve many of these contested issues on the basis of the available record. Accordingly, in some instances, the Department is unable to reach a conclusion about the impact of the proposed standards on competition.

Fluorescent Lamp Ballasts

One technical issue that has been raised is whether the proposed standards for fluorescent lamp ballasts are attainable with currently available technology. Numerous ballast manufacturers assert that in many instances they are not. The Department concludes that the doubts raised about the technical feasibility of the standards are serious and affect a substantial number of ballast classes. Thus, if the proposed standards were adopted some or all manufacturers would likely have to cease the production of many products and competition in the sale of those products would cease or diminish.

Television Sets and Related Technologies

1. The weight of available evidence is that adoption of the proposed standard for television sets could force all or many manufacturers to revise their products to lessen the number and quality of their features. Many in the industry contend that the only way to produce products that will comply with the standard would be to reduce or eliminate features that consume electricity such as brighter pictures, remote control, picture-in-picture, improved sound and in-set program guides and other features presently being developed. Development and marketing of product improvements and new features has been an important factor driving competition in the market for television sets. Reducing or retarding the development of such features could substantially reduce demand for sets, retard development and refinement of technology, and reduce utility of the product.

Manufacturers might attempt to circumvent the proposed standard by letting features ''migrate''—incorporating them in units to be sold separately or packaged with television sets. It is claimed that disaggregating features in this manner will decrease overall television energy efficiency. There is evidence that it could also lessen competition because the development and marketing of features in such attached units could be costly and cumbersome, among other things encountering receivers that receive cable signals.

There is evidence that the proposed standard for television sets could affect competition in other markets. Representatives of the television industry assert that as the ''Information Highway'' develops television manufacturers intend to expand the capabilities of their products to include new features to enable them to serve as in-home devices for data transmission and communication. They argue that the TV receiver, already located in virtually every American home, could be a uniquely efficient vehicle for the introduction of new data-processing and communication devices. The Department does not make final judgement on this contention but does conclude that, given the apparent difficulties in the marketing of new features as part of attached units, the standard is likely to retard the development of technology and inhibit the ability of television manufacturers to compete with computer manufacturers and others in the development of new technologies and features for the Information Highway.

Professional-Style and Standard Ranges

The Notice proposes a single set of standards for gas ovens and cooking tops in household ranges. There is substantial evidence that one category of home range cannot be manufactured to meet these proposed standards without losing so much of its distinct characteristics that it is no longer marketable. Professional-style or high-end ranges are products designed to provide some of the performance characteristics of professional or restaurant ranges for home kitchens. Some of these characteristics which differentiate them from standard kitchen ranges, such as high performance burners and ovens, involve considerably more energy consumption than do standard ranges; the special uses and appeal of these products, and their premium in price, depends in good measure on these features. Representatives of the range industry assert that high-end ranges cannot be modified to comply with the proposed standards without giving up so much of the special features of the product that they are no longer marketable. The Department concludes that it is likely that competition in the manufacture and sale of these products will be eliminated if the proposed standards are adopted.

While not as strong as the evidence relating to professional style ranges there is evidence challenging the conclusions in the TSD that the proposed standards for standard gas and electric range ovens and cooking tops will not require significant retooling or redesign and will have not more than minimal impact on manufacturers' long run rates of return on equity. The Association of Home Appliance Manufacturers contends that the standard could have a destructive impact on the range industry. It and various range manufacturers claim that design options suggested in the TSD are not effective and that compliance would require substantial investment in redesign and retooling. The Association also insists that suppliers of equipment and technology necessary to comply may not be able to respond simultaneously and evenly to range manufacturers, a problem that could impose a competitive handicap on some range manufacturers.

A range manufacturer has commented that compliance with the standard could seriously weaken it and its ability to compete. There is also evidence that the cumulative costs of compliance with this standard and with other and future appliance standards could induce or force ''full line'' appliance manufacturers to exit one or more of the markets that they serve. The range market is concentrated and, while there is conflicting evidence, the Department concludes that there is a possibility that this proposed standard could force one or more

firms out of the manufacture of standard ranges thus lessening competition.

Microwave Ovens

The Notice and the TSD conclude that the proposed standard for microwave ovens will not involve any substantial redesign or retooling by manufacturers and will have little impact on their long run returns on equity. Representatives of the industry strongly challenge these conclusions. For example, a representative of MCD Corporation has testified that compliance with the standard would require that her company, a manufacturer of microwaves, make large investments in retooling, and would threaten its viability. The Association of Home Appliance Manufacturers contends that the standard will in all likelihood eliminate all U.S. Production of microwaves and concentrate U.S. sales in the hands of one or two companies. The Department is not in a position to resolve all of the contested technical and financial issues but concludes that this proposed standard could force some significant producers from this concentrated market and substantially lessen competition in it.

Room Air Conditioners

The Notice and TSD conclude that this proposed standard will not involve substantial redesign or retooling and, while it may produce some reductions in the short run, will have little or no effect on manufacturers' long run returns on equity. This conclusion has been challenged by firms in the industry. There is evidence that some of the design options suggested in the Notice are less effective and more costly than the TSD assumes and that manufacturers may, among other things, need to redesign the chassis of some classes to comply with the standard. Such redesigns could add to unit installation costs, make units larger and more cumbersome to install, and otherwise depress demand. There is evidence that at least one product, the five thousand BTU unit, may cease to be manufactured if the standard is adopted. There are also unresolved issues about such matters as the availability and efficacy of some design options suggested in the TSD. The Department is not able to resolve these issues but concludes that the standard could have a substantial negative impact on demand and rates of return, and cause one or more firms to cease the manufacture and sale of some of these products, thus lessening competition.

Direct Heating Equipment

Manufacturers of direct heating equipment contend that this standard will seriously depress demand for their product and likely force some, perhaps all, manufacturers out of this business. Among other things, they contend that the TSD substantially underestimates the added costs of manufacture, and also the added installation costs for venting and wiring, that will be required. They insist that consumer cost increases will seriously depress demand for their product and that their profit margins will suffer because it will be impossible to pass on much of the increased manufacturing costs to consumers. The Department cannot resolve many of these issues but concludes that there is a possibility that several of the five companies that account for most of the production of these products might exit the market if the standard is adopted thus substantially lessening competition.

Water Heaters

Manufacturers of oil-fired heaters contend that the proposed standard for their product class would threaten the survival of the product, likely forcing all or most producers out of this business. Some claim that it may not be possible with presently available technology to design and manufacture a product that would comply. Manufacturers assert that the added costs of producing a product in compliance with the standard would, in any event, be considerably higher than the TSD indicates and that increases in price would very seriously depress consumer demand for this product. Five firms, two of them Canadian producers, account for most of the sales of this product in the U.S. The Department is not able to resolve all the questions raised regarding this standard; it concludes that there is at least a possibility that the standard might force one or more of these competitors to exitthe U.S. market. Another firm has been taking steps to enter the oil-fired water heater market; adoption of the standard may deter it from doing so. The loss of one such firm could result in a substantial lessening of competition.

DOE's proposed standard for electric water heaters would, in effect, require that such products have an integral heat pump. DOE concedes that this would involve major changes and might cause one or more existing firms to cease the marketing of electric water heaters but believes that other firms such as air conditioner manufacturers may begin producing electric water heaters as a result of the standard. There are complex and unresolved issues as to what would happen to demand for electric water heaters if consumers were required to purchase heat pumps with them. It seems clear that the price of such units will be considerably higher than that of the electric resistance heaters that the standard would remove from the market, but the range of future prices, costs of installation and maintenance and degree of consumer acceptance of a product that has not been widely accepted until now are very difficult to predict. Heat pump water heaters may be useful and economically attractive to many consumers but serious issues have been raised in this proceeding as to whether certain kinds of consumers, such as households with relatively little demand for hot water, will derive a benefit from the product.

Even if the heat pump water heater is eventually widely accepted in the market the Department has concluded that it is likely that competition will be adversely affected for some period of time if adequate time is not permitted for the phasing in of the standard. Three million units or more of electric resistance units are now sold annually in the U.S. Only a few thousand heat pump units are now produced annually in this country, by two firms. It could take a considerable time for other firms to design new product lines and being substantial ne production capacity on line. There is also evidence from those with experience with the product that heat pump water heaters require special maintenance and servicing. Considerable time may be required for firms to develop and train adequate distribution and service networks if they are to compete effectively. If adequate time for phasing in the standard is not allowed, for a considerable period of time there could be fewer companies competing effectively in the electric water heater business than there are now, and competition in this concentrated market could be substantially lessened.

Cumulative Effects of Regulation

Many of the manufacturers of appliances subject to the proposed standards manufacture several different types of appliance, each subject to those standards or to others authorized by the Act. As indicated above, there is evidence that compliance with some of these standards may require manufacturers to make considerable investments. It is anticipated that future standards for other appliances could require manufacturers to make similar investments. Full-line manufacturers such as General Electric, Whirlpool, Frigidaire, Amana and Maytag could thus be required to make changes in several product lines.

As the TSD recognizes, it is difficult for manufacturers to pass redesign and retooling costs on to consumers. And the impact of a single product redesign may fall more heavily on firms with small shares of the market since they must write off their costs against less sales volume. There is some evidence that firms, particularly the smaller ones, facing the prospect of repeated redesigns involving several different products, may be induced to cease manufacturing one or more of such product lines. Thus to a degree that we cannot fully assess there is a possibility that the cumulative effect of these and future energy efficiency standards could be to lessen competition in one or more home appliance markets.

Sincerely yours,

Anne K. Bingaman,

Assistant Attorney General.

[FR Doc. 97–24978 Filed 9–23–97; 8:45 am]

BILLING CODE 6450–01–P

Federal Register

Wednesday
September 24, 1997

Part IV

Environmental Protection Agency

40 CFR Part 9 et al.

Control of Emissions of Air Pollution from Nonroad Diesel Engines; Proposed Rule

ENVIRONMENTAL PROTECTION AGENCY

40 CFR Parts 9, 86, and 89

[AMS–FRL–5888–4]

RIN 2060–AF76

Control of Emissions of Air Pollution From Nonroad Diesel Engines

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice of proposed rulemaking.

SUMMARY: In this action, EPA is proposing new emission standards for nonroad diesel engines. The affected engines are used in most land-based nonroad equipment and some marine applications. If these standards are implemented as proposed, the resulting emission reductions would translate into significant, long-term improvements in air quality in many areas of the U.S. For engines in this large category of pollution sources, the standards for oxides of nitrogen and particulate matter emissions would be reduced by up to two-thirds from current standards. Overall, the proposed program would provide much-needed assistance to states facing ozone and particulate air quality problems that are causing a range of adverse health effects for their citizens, especially in terms of respiratory impairment and related illnesses.

DATES: EPA will hold a hearing on the proposed rulemaking on October 8, 1997. EPA requests comments on the proposed rulemaking by November 24, 1997. More information about commenting on this action and on the public hearing and meeting may be found under Public Participation in **SUPPLEMENTARY INFORMATION**, below.

ADDRESSES: Materials relevant to this proposal, including the Draft Regulatory Impact Analysis are contained in Public Docket A–96–40, located at room M–1500, Waterside Mall (ground floor), U.S. Environmental Protection Agency, 401 M Street, S.W., Washington, DC 20460. The docket may be inspected from 8:00 a.m. until 5:30 p.m., Monday through Friday. A reasonable fee may be charged by EPA for copying docket materials.

Comments on this proposal should be sent to Public Docket A–96–40 at the above address. EPA requests that a copy of comments also be sent to Alan Stout, U.S. EPA, Engine Programs and Compliance Division, 2565 Plymouth Road, Ann Arbor, MI 48105.

The public hearing will be held at Ramada Hotel O'Hare, 6600 North Mannheim Road, Rosemont, IL 60018, phone number (847) 827–5131. The public hearing will begin at 9 a.m. and will continue until all testimony has been presented. A transcript of the hearing will be placed in the docket. Copies may also be obtained by arrangement with the court reporter on the day of the hearing.

For further information on electronic availability of this proposal, see **SUPPLEMENTARY INFORMATION** below.

FOR FURTHER INFORMATION CONTACT: Alan Stout, U.S. EPA, Engine Programs and Compliance Division, (313) 741–7805; stout.alan@epamail.epa.gov.

SUPPLEMENTARY INFORMATION:

Regulated Entities

Entities potentially regulated by this action are those that manufacture or introduce into commerce new compression-ignition nonroad engines, vehicles, or equipment, and entities that rebuild or remanufacture nonroad compression-ignition engines. Regulated categories and entities include:

Category	Examples of regulated entities
Industry	Manufacturers of new nonroad diesel engines and equipment.
Industry	Rebuilders and remanufacturers of nonroad diesel engines.

This list is not intended to be exhaustive, but rather provides a guide for readers regarding entities likely to be regulated by this action. To determine whether particular activities may be regulated by this action, the reader should carefully examine the proposed regulations, especially the applicability criteria in § 89.1, and the existing regulatory language in 40 CFR part 89. Questions regarding the applicability of this action to a particular entity may be directed to the person listed in **FOR FURTHER INFORMATION CONTACT.**

Obtaining Electronic Copies of the Regulatory Documents

The preamble, regulatory language and Draft Regulatory Impact Analysis (Draft RIA) are also available electronically from the EPA Internet Web site. This service is free of charge, except for any cost already incurred for internet connectivity. The electronic version of this proposed rule is made available on the day of publication on the primary Web site listed below. The EPA Office of Mobile Sources also publishes **Federal Register** notices and related documents on the secondary Web site listed below.

1. http://www.epa.gov/docs/fedrgstr/EPA–AIR/ (either select desired date or use Search feature)
2. http://www.epa.gov/OMSWWW/ (look in What's New or under the specific rulemaking topic)

Please note that due to differences between the software used to develop the document and the software into which the document may be downloaded, changes in format, page length, etc., may occur.

Table of Contents

I. Introduction

Air pollution continues to represent a serious threat to the health and well-being of millions of Americans and a large burden to the U.S. economy. This threat exists despite the fact that over the past two decades great progress has been made at the local, state, and national levels in controlling emissions from many sources of air pollution. As

a result of this progress, many individual emission sources, both stationary and mobile, pollute at only a fraction of their precontrol rates. However, continued industrial growth and expansion of motor vehicle usage threaten to reverse these past achievements. Today, many states are finding it difficult to meet the current ozone and particulate matter National Ambient Air Quality Standards (NAAQS) by the deadlines established in the Act.[1] Furthermore, other states that are approaching or have reached attainment of the current ozone and PM NAAQSs will likely see those gains lost if current trends persist.

In recent years, significant efforts have been made on both a national and state level to reduce air quality problems associated with ground-level ozone, with a focus on its main precursors, oxides of nitrogen (NO_X) and volatile organic compounds (VOCs).[2] In addition, airborne particulate matter (PM) has been a major air quality concern in many regions. As discussed below, ozone and PM have been linked to a range of serious respiratory health problems and a variety of adverse environmental effects.

The states have jurisdiction to implement a variety of stationary source emission controls. In most regions of the country, states are implementing significant stationary source NO_X controls (as well as stationary source VOC controls) for controlling acid rain, ozone, or both. In many areas, however, these controls will not be sufficient to reach and maintain the current ozone standard without significant additional NO_X reductions from mobile sources. Generally, the Clean Air Act specifies that emission standards for controlling NO_X, HC, and PM emissions from new mobile sources must be established at the federal level.[3] Thus, the states look to the national mobile source emission control program as a complement to their efforts to meet air quality goals. The concept of common emission standards for mobile sources across the nation is strongly supported by manufacturers, which often face serious production inefficiencies when different requirements apply to engines or vehicles sold in different states or areas.

Mobile source emission control programs have a history of technological success that, in the past, has largely offset the pressure from constantly growing numbers of vehicles and miles traveled in the U.S. The per-vehicle rate of emissions from new passenger cars and light trucks has been reduced to very low levels. Similarly, manufacturers of heavy-duty engines for highway use have developed new technological approaches over the past two decades that have significantly reduced emissions from these engines; new standards scheduled to take effect in 1998 will result in significant further emission reductions from trucks and buses (58 FR 15781, March 24, 1993). As a result, increasing attention is now focused on the engines used in a wide range of nonroad equipment.

Manufacturers of engines for nonroad applications have only recently become subject to emission regulations. The lessons learned from many years of reducing passenger car and heavy-duty truck emissions are being applied to nonroad engines; however, extensive new efforts are necessary to develop emission control techniques that address unique characteristics of nonroad applications (such as special engine cooling needs, dusty operating environments, marine use, etc.). The broad range of engine sizes (from a few kilowatts of power to many hundreds of kilowatts), the vast array of agricultural, construction, industrial, and electrical generation applications into which nonroad engines are installed, the large number of equipment manufacturers, and the newness of many in this industry to emission control requirements all combine to increase the challenge of reducing emissions from nonroad engines. A more detailed discussion of the history of nonroad engine emission control is included under Background (Section II.B.).

In addition, there are technological challenges inherent to nonroad diesel-cycle engine design that must be addressed.[4] While diesel engines provide advantages in terms of fuel efficiency, reliability, and durability, controlling NO_X emissions is generally considered a greater challenge for diesel engines than for otto-cycle engines. Similarly, control of PM emissions, which are very low for gasoline-fueled engines, represents a substantial challenge for diesel engines. Part of this challenge for diesel engines is that most traditional NO_X control approaches tend to increase PM emissions, and vice versa. A more complete discussion of technology issues is presented under Technological Feasibility (Section V).

This notice proposes a new set of emission standards for all nonroad diesel engines, except for locomotive engines, engines used in underground mining equipment, and marine engines rated over 37 kW.[5] EPA's Supplemental Advance Notice of Proposed Rulemaking (Supplemental ANPRM), published on January 2, 1997, and the comments received on that notice provide the framework for these new emission standards (62 FR 200, January 2, 1997).

II. Background

A. Air Quality Problems Addressed in the Proposed Rule

The emission standards proposed in this notice are intended to be a major step in reducing the human health and environmental impacts of ground-level ozone and particulate matter (PM). This section summarizes the air quality rationale for these new emission standards and their anticipated impact on nonroad diesel emissions.

1. Ozone

There is a large body of evidence showing that ground-level ozone, which is formed from photochemical reactions of NO_X and VOCs, causes harmful respiratory effects, including chest pain, coughing, and shortness of breath. Ozone most severely affects people with compromised respiratory systems and children. In addition, NO_X itself can directly harm human health. Beyond their effects on human health, other negative environmental effects are also associated with ozone and NO_X. Ozone has been shown to injure plants and materials; NO_X contributes to the secondary formation of PM (nitrates), acid deposition, and the overgrowth of algae in coastal estuaries. These environmental effects, as well as the health effects described above, are described in the Draft RIA. Additional information may be found in EPA's ''staff papers'' and ''air quality criteria''

[1] See U.S.C. 7401 *et seq.*

[2] VOCs consist mostly of hydrocarbons (HC), including nonmethane hydrocarbons (NMHC).

[3] The CAA limits the role states may play in regulating emissions from new motor vehicles and nonroad engines. California is permitted to establish emission standards for new motor vehicles and most new nonroad engines; other states may adopt California's programs (sections 209 and 177 of the Act).

[4] Diesel-cycle engines, referred to simply as ''diesel engines'' in this notice, may also be referred to as compression-ignition (or CI) engines. These engines typically operate on diesel fuel, but other fuels may be also be used. This contrasts with otto-cycle engines (also called spark-ignition or SI engines), which typically operate on gasoline.

[5] This proposal is based on metric units. With the exception of engine power ratings, English units are included parenthetically throughout the preamble. The conversion of engine power ratings is included in Table 1, but is not repeated in the rest of the document.

documents for ozone and nitrogen oxides.[6,7,8,9]

Today, many states are finding it difficult to show how they can meet or maintain compliance with the current National Ambient Air Quality Standard for ozone by the deadlines established in the Act.[10] There are 66 areas currently designated ''nonattainment'' for ozone.

Local, state and federal organizations charged with initiating programs to achieve cleaner air have mounted significant efforts in recent years to reduce air quality problems associated with ground-level ozone, and there are signs of partial success. The main precursors of ozone, NO_X, and VOCs appear to have been reduced, and average levels of ozone seem to have begun gradually decreasing. However, this progress is in jeopardy. EPA projects that reductions in ozone precursors that will result from the full implementation of current emission control programs will fall far short of what would be needed to offset the normal emission increases that accompany economic expansion. By the middle of the next decade, the Agency expects that the downward trends will have reversed, primarily due to increasing numbers of emission sources. As discussed below, EPA expects that NO_X levels will have returned to current levels by around 2020 in the absence of significant new reductions. To the extent that some areas are seeing a gradual decrease in ozone levels in recent years, EPA believes that the expected increase in NO_X will likely result in an increase in ozone problems in the future.

NO_X controls are an effective strategy for reducing ozone where its levels are relatively high over a large region (as in the Northeast and much of the Midwest, Southeast, and California). EPA and states see regional control of NO_X emissions, in addition to local-scale VOC and NO_X controls, as a key to improving regional-scale air quality in many parts of the country. Specifically, EPA believes that regional-scale reductions in NO_X emissions will be necessary for many areas to attain and maintain compliance with the current ozone NAAQS. For the regions listed above, the NO_X reductions needed are very large (greater than 50 percent from base 1990 emissions in many cases). New programs to control emissions from both stationary and mobile sources will be necessary in most of these areas, since it is unlikely that cost effective controls of this magnitude can be achieved with either source category alone. Although in some locations and circumstances moderate reductions in local NO_X emissions may be associated with localized increases in ozone, the Agency is convinced that the ultimate attainment goal of all nonattainment areas necessitates continued reduction of regional-scale NO_X emissions.

2. Particulate Matter

Particulate matter, like ozone, has been linked to a range of serious respiratory health problems. Particles are deposited deep in the lungs and result in effects including premature death, increased hospital admissions and emergency room visits, increased respiratory symptoms and disease, decreased lung function (particularly in children and individuals with asthma), and alterations in lung tissue and structure and in respiratory tract defense mechanisms. These effects are discussed further in the Draft RIA for this rule. (Additional information may be found in EPA's ''staff paper'' and ''air quality criteria document'' for particulate matter.[11 12])

Currently, there are 80 PM–10 nonattainment areas across the U.S. (PM–10 refers to particles smaller than 10 microns in diameter.) As is the case with NO_X, levels of PM caused by mobile sources are also expected to rise in the future. EPA believes that this projected increase will occur for two reasons: because of the expected continued increase in numbers of PM sources, including nonroad diesel engines; and because NO_X from diesel engines and other sources is transformed in the atmosphere into fine secondary nitrate particles.

Secondary nitrate particles account for a substantial fraction of the airborne particulate in some areas of the country, especially in the West. Measurements of ambient PM in some western U.S. urban areas that are having difficulty meeting the current NAAQS for PM–10 have indicated that secondary PM is a very important component of the problem. Secondary nitrate PM (consisting mostly of ammonium nitrate) is the major constituent of this secondary PM. For example, in Denver, on days when PM levels are high, about 25 percent of the measured PM–2.5 is ammonium nitrate. In the Provo/Salt Lake City area, secondary PM comprises about 40 percent of the measured PM–10. Similarly, in the Los Angeles Basin, secondary nitrate PM levels represent about 25 percent of measured PM–10.[13] Nitrate PM constitutes a smaller, but often important, fraction of PM in other areas of the country.

Because the atmospheric chemistry of secondary PM formation has common attributes to that of ozone, secondary PM also tends to be a regional, rather than a strictly local phenomenon. For this reason, EPA believes that regional-scale NO_X controls, including control of mobile NO_X sources, are very effective in reducing secondary PM over a significant area. For example, California's PM State Implementation Plans for serious areas conclude that secondary formation of nitrate particulate due to regional-scale NO_X emissions contributes to the particulate problem in the South Coast Air Basin, Coachella Area, and the San Joaquin Valley. EPA and the State of California believe that reduction of this fraction of the total PM will require additional regional-scale reductions in NO_X emissions.[14]

EPA believes that mobile sources, including nonroad diesel engines, contribute substantially to the fraction of ambient PM that is generally considered controllable. (The largest fraction of ambient PM is attributed to ''miscellaneous'' and ''natural'' sources, including wind erosion, wildfires, and fugitive dust, which are difficult or impossible to control.) As discussed in more detail in the next section, mobile sources make up more than a quarter of ''controllable'' sources (i.e., excluding

[6] U.S. EPA, 1996, Review of National Ambient Air Quality Standards for ozone, Assessment of Scientific and Technical Information, OAQPS Staff Paper, EPA–452/R–96–007 (found in Air Docket A–95–58).

[7] U.S. EPA, 1996, Air Quality Criteria for Ozone and Related Photochemical Oxidants, EPA/600/P–93/004aF (found in Air Docket A–95–58).

[8] U.S. EPA, 1995, Review of National Ambient Air Quality Standards for Nitrogen Dioxide, Assessment of Scientific and Technical Information, OAQPS Staff Paper, EPA–452/R–95–005 (found in Air Docket A–93–06).

[9] U.S. EPA, 1993, Air Quality Criteria for Oxides of Nitrogen, EPA/600/8–91/049aF (found in Air Docket A–93–06).

[10] See 42 U.S.C. 7401 *et seq.*

[11] U.S. EPA, 1996, Review of National Ambient Air Quality Standards for Partculate Matter, Assessment of Scientific and Technical Information, OAQPS Staff Paper, EPA–452/R–96–013 (found in Air Docket A–95–54).

[12] U.S. EPA, 1996, Air Quality Criteria for Particulate Matter, EPA/600/P–95/001aF (found in Air Docket A–95–54).

[13] Summary of Local-Scale Source Characterization Studies, EPA–230–S–95–002, July, 1994 (Air Docket A–96–40).

[14] Memorandum to the docket from Carol Bohnenkamp, EPA Region 9, regarding regional nature of secondary nitratee PM in California, July 30, 1997 (Docket A–96–40).

miscellaneous and natural sources), with nonroad diesel engines accounting for about 16 percent. In addition, secondary PM contributes significant additional PM in some western PM nonattainment areas.

3. Contribution of Nonroad Engines to Emissions

Figure 1 shows EPA's current estimates of the NO_X emissions from the categories of nonroad diesel engines affected by the proposed standards. For 1996, nonroad diesel engines are estimated to represent about 27 percent of mobile source NO_X and 13 percent of total NO_X emissions. In the future, EPA projects NO_X emissions from these engines to drop slightly due to the Tier 1 emission standards, but then begin to rise again as growth overtakes the Tier 1 improvements. The contributions of the engines covered by this proposal to mobile source NO_X and total NO_X are projected to remain about constant.

BILLING CODE 6560–50–P

Figure 1

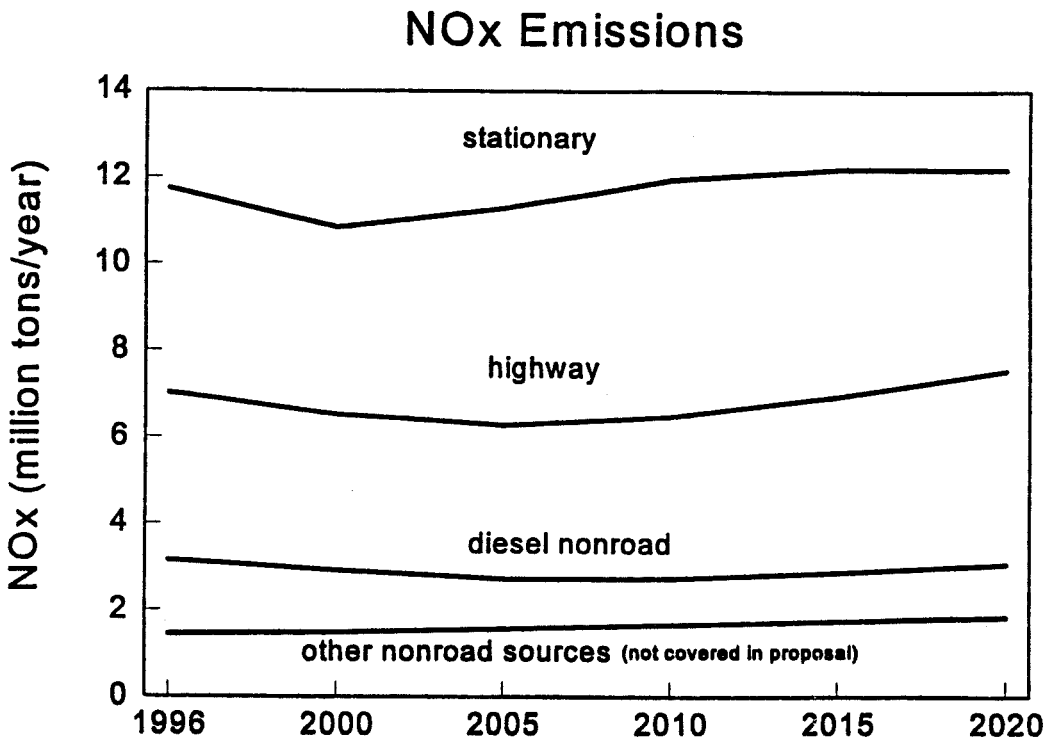
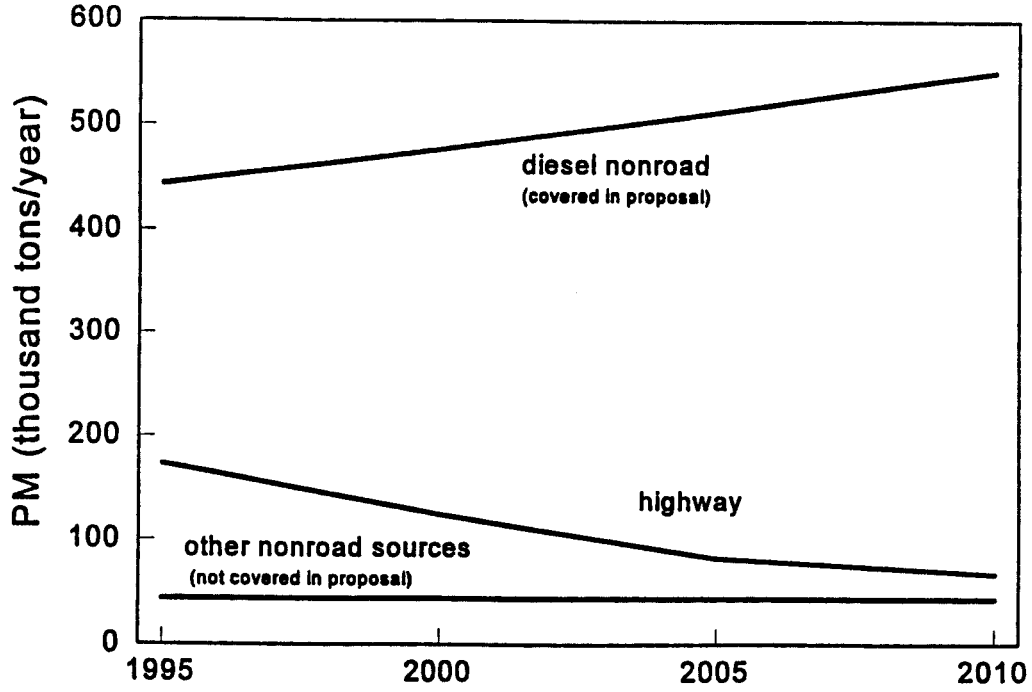


Figure 2



BILLING CODE 6560–50–C

Similarly, Figure 2 presents the Agency's best current projections for diesel PM emissions. EPA estimates that nonroad diesel engines currently contribute about 440,000 tons, or 48 percent of the directly emitted PM from mobile sources and 16 percent of total controllable PM emissions. In the future, Figure 2 projects that nonroad diesel PM emissions will steadily rise in the absence of new emission standards. In addition to directly emitted PM, EPA estimates that, as a national average, nonroad diesel engines currently contribute approximately 130,000 tons of PM in the form of secondary nitrate particles, based on the estimated 3,100,000 tons of NO_X emitted by these engines. Since NO_X emissions from these engines is expected to decrease slightly and then begin to rise (see Figure 1), nitrate PM attributable to these engines can be expected to follow the same pattern.[15]

In this rule, EPA is for the first time proposing emission standards for NMHC + NO_X, PM, carbon monoxide (CO), and smoke from engines rated under 37 kW. Engines in this category contribute to emissions of each of these pollutants, including emissions in nonattainment areas. Chapter 5 of the Draft RIA presents the Agency's most recent estimates of emissions from all land-based nonroad diesel engines and marine diesel engines rated under 37 kW.[16]

B. Legislative and Regulatory History

1. U.S. Federal Action

Section 213(a)(1) of the Clean Air Act required that the Agency study the emissions from all categories of nonroad engines and equipment to determine, among other things, whether these emissions ''cause or significantly contribute to, air pollution which may reasonably be anticipated to endanger public health and welfare.'' Section 213(a)(2) further required EPA to determine whether the emissions of CO, VOC, and NO_X found in the above study significantly contributed to ozone or CO emissions in more than one nonattainment area. With a determination of significance, section 213(a)(3) requires the Agency to establish emission standards regulating CO, VOC, and NO_X emissions from new nonroad engines and vehicles. EPA may also promulgate emission standards under section 213(a)(4) regulating any other emissions from nonroad engines that EPA finds contribute significantly to air pollution.

On June 17, 1994, EPA made an affirmative determination under section 213(a)(2) that nonroad emissions are significant contributors to ozone or CO in more than one nonattainment area (59 FR 31306, June 17, 1994). In the same notice, EPA set a first phase of emission standards (''Tier 1 standards'') for nonroad diesel engines rated 37 kW and above. The Tier 1 standards did not include engines used in aircraft, underground mining equipment, locomotives, or marine vessels. EPA has initiated separate rulemakings to adopt regulations appropriate to different subgroups of nonroad engines, as described below.

EPA has taken several other actions under section 213, some of which provide important background for this proposal and are discussed here. The Agency recently published proposed emission standards for locomotive engines, which are addressed separately by the Act under section 213(a)(5) (62 FR 6366, February 11, 1997). Aircraft, which are regulated under sections 231 through 234 of the Act, must comply with emission standards finalized May 8, 1997 (62 FR 25356).

With regard to marine engines, EPA has finalized regulations for recreational marine engines, including personal watercraft and outboard engines (61 FR 52087, October 4, 1996).[17] That final rule sets no standards for diesel marine engines, though emission standards were proposed for those engines (59 FR 55929, November 9, 1994; 61 FR 4600, February 7, 1996). The large diesel marine rule is currently under development. However, as discussed in the Supplemental ANPRM, emission standards for marine diesel engines rated under 37 kW are included in the scope of this proposal.

EPA has also established a first phase of regulations for small SI engines, those rated under 19 kW (60 FR 34582, July 3, 1995). These engines are used in handheld and nonhandheld applications like chainsaws and lawnmowers. The Agency has also published an ANPRM for a second phase of control for these engines (62 FR 14740, March 27, 1997). SI engines rated over 19 kW remain unregulated, though EPA has begun work toward new emission standards for those engines.

2. State of California Action

The California Air Resources Board (California ARB) has the authority to regulate emissions from all nonroad engines, except for new engines used in locomotives and new engines used in farm and construction equipment rated under 130 kW. So far, the California ARB has adopted regulations for four groups of nonroad engines. First, emission standards have been promulgated for new small off-road engines rated under 19 kW, including both diesel and otto-cycle models. The California ARB, as a signatory to the Nonroad Statement of Principles, has indicated its intent to amend the regulations for small off-road engines to be consistent with the Statement of Principles for diesel engines rated under 19 kW in this notice. The California ARB has also set emission standards for new land-based nonroad diesel engines rated over 130 kW, which will be harmonized with the standards proposed in this notice. The California ARB has also adopted emission standards for nonroad recreational engines, including both compression-ignition and the more prevalent spark-ignition models. EPA intends to work cooperatively with the California ARB to develop new emission standards for nonroad SI engines rated over 19 kW (including new EPA emission standards applicable to engines for recreational vehicles). Finally, the California ARB has approved a voluntary registration and control program for existing portable equipment.

3. Development of This Proposal

In 1994 and 1995, states and environmental groups encouraged EPA to adopt more stringent emission standards for highway and nonroad diesel engines, in order to address the need for national pollution reduction measures to improve air quality in many urban areas. In response, EPA initiated discussions with engine manufacturers regarding future emission controls for these engines, gathering input from other interested parties as well. EPA, the California ARB, and engine manufacturers subsequently developed and agreed on a Statement of Principles supporting proposal of new emission standards for heavy-duty highway engines starting with the 2004 model year, which were published with an ANPRM on August 31, 1995 (60 FR 45580). These emission standards were formally proposed on June 27, 1996 (61 FR 33421), with signature on a final rule expected in 1997.

The Statement of Principles for highway engines included a

[15] ''Emission Inventories Used in the Nonroad Diesel Proposed Rule,'' EPA memorandum to Air Docket A–96–40 from Joe Somers, August 1997.

[16] See also, ''Nonroad Engine and Vehicle Emission Study—Report and Appendices,'' EPA–21A–201, November 1991 (available in Air Docket A–96–40).

[17] The final rule set no standards for sterndrive/inboards; refer to the preamble of that rule for a discussion of that decision.

commitment by the signatories to also pursue appropriate standards for nonroad engines, which was further discussed in the associated ANPRM. Subsequently, EPA, the California ARB, and engine manufacturers completed a similar Statement of Principles for nonroad diesel engines, which was then published with a Supplemental ANPRM, announcing the initiation of the rulemaking described in this document (62 FR 200, January 2, 1997). The Nonroad Statement of Principles and the comments received on the Supplemental ANPRM serve as a blueprint for the emission standards and other regulatory provisions proposed in this document.

In addition, in accordance with the Small Business Regulatory Enforcement Fairness Act of 1996, EPA conducted outreach to small businesses from various industry sectors to inform them of regulatory provisions of this proposed rule that may affect them and to seek early comment. As described below in Section VIII.B. (Regulatory Flexibility Act), EPA convened a federal government panel which collected comments and made recommendations about how the proposed program could reduce the impact on small entities. Several provisions to provide flexibility or relief for small businesses were recommended by small-entity commenters and the panel and have been incorporated into this proposal.

4. Harmonization

As EPA has pursued the emission reductions from nonroad engines needed to meet air quality goals, an important consideration has been harmonization with standards adopted and under consideration in California and Europe. The international nature of this industry, in which many manufacturers sell engines and equipment globally, makes harmonized standards and test procedures very important. Harmonized programs can avoid costly multiple design configurations to meet varying requirements, with associated cost savings to ultimate purchasers. In addition, with regard to international trade, harmonization reduces the cost of introducing a product into another country. For these reasons, EPA has pursued a policy of harmonizing with both California and the European Union (EU), to the extent this can be accomplished under the air quality improvement goals and process constraints of all of the parties, and to the extent it does not have a significant adverse impact on EPA's overarching mission of improving air quality in the United States.

To date, the goal of harmonization has been an important factor in the context of this rule and, in fact, harmonization was a major impetus behind the development of the Nonroad Statement of Principles. EPA and the California Air Resources Board agreed in that document to pursue harmonized standards and test procedures such that a nonroad diesel engine family tested and certified by EPA could be sold in California and, similarly, an engine family tested and certified in California could be sold in the rest of the country. Regarding international harmonization, the Statement of Principles signatories expressed an intent to work with the European Union, Japan, and other regulatory bodies in developing harmonized future standards, including provisions for implementation flexibility.

Subsequent to the completion of the Nonroad Statement of Principles, the responsible regulatory group in the EU issued a draft directive proposing a new round of standards that are aligned with the Tier 2 standards spelled out in this proposal.[18] This harmonization was a direct result of extensive discussions on potential standards that would be mutually acceptable.

Though harmonized to a great degree, the proposed EPA and EU standards are not identical. In particular, the proposed EU standards do not cover engines rated under 19 kW or above 560 kW and the EU proposal does not include Tier 3 standards. In addition, the EU proposed separate NO_X and HC standards (in contrast to EPA's proposed combined standards), and specified a somewhat different implementation schedule. Nevertheless, the goal of harmonization efforts, avoiding widespread duplicative design configurations, is being addressed at this stage of proposing new standards. Beyond standard levels and implementation dates, there are other differences between EPA and EU programs, including approaches to averaging, banking, and trading programs, flexibility provisions, and test procedure specifications. EPA plans to continue its harmonization work with governments in Europe and in other countries, in conjunction with the usual public rulemaking process, to build on the substantial successes to date. One major area in which a coordinated program will be pursued is the evaluation and possible modification of the certification test cycle discussed in Section III.B.

It should be noted that the small marine engines included in this proposal are not currently addressed in the EU program. Therefore, the ultimate success of international harmonization efforts with respect to these engines depends on further efforts by regulating agencies. It should also be noted that these engines are not covered by International Maritime Organization NO_X reduction efforts in the context of the International Convention for the Prevention of Pollution from Ships (MARPOL).

5. 2001 Feasibility Review

EPA proposes to conduct a special review, to be concluded in 2001, to reassess the appropriateness of the Tier 2 standards for engines rated under 37 kW and the Tier 3 standards for engines rated between 37 and 560 kW (including whether to propose the introduction of Tier 3 standards for PM). In addition to reviewing whether or not the proposed standards are technologically feasible and otherwise appropriate under the Clean Air Act, the Agency will examine the need for equipment redesign due to the proposed standards and will take appropriate action, such as proposing to relax or delay the standards, if significant adverse impacts on the nonroad equipment industry are identified.

Before making a final decision in this review, EPA intends to issue a proposal and offer an opportunity for public comment on whether the Tier 2 standards for engines rated under 37 kW and the Tier 3 standards for engines rated between 37 and 560 kW continue to be consistent with the Act and continue to be technologically feasible for implementation according to the proposed schedule. Any Tier 3 PM standards would also be proposed in such a notice. Following the close of the comment period, EPA intends to issue a final Agency decision under section 307 of the Act.

If by 2001 EPA finds the emission standards are not feasible according to the proposed schedule, or are otherwise not appropriate under the Act, EPA will propose changes to the program, possibly including adjustments to the levels of the standards. The adjusted standards may be more or less stringent than those already established, including the possibility of a new emission standard for particulate matter. Any change to the specified certification test procedure, including the possible adoption of a transient test cycle, will be

[18] Common Position (EC) No. /96, Adopted by the Council On _____ With a View to Adopting Directive 96/ /EC of the European Parliament and of the Council On the Approximation of the Laws of the Member States Relating To Measures Against the Emission of Gaseous and Particulate Pollutants From Internal Combustion Engines to Be Installed In Non-Road Mobile Machinery,'' draft dated November 12, 1996 (available in Docket A–96–40).

factored into the evaluation of the appropriateness of the numerical standards. The standards finalized in the rulemaking initiated by this proposal would stay in effect unless revised by subsequent rulemaking procedure. The Supplemental ANPRM provides additional discussion of the Agency's plans for the feasibility review.

Based on the information presented in the Draft RIA and in Section V of this notice, EPA believes the proposed standards are technologically feasible and otherwise appropriate under the Act. Nonetheless, it is clear that a significant amount of research and development will be needed to comply with the proposed standards. Over the next several years, EPA will be actively engaged in programs to evaluate technology developments and progress toward meeting the proposed standards. This process will involve in-house programs, coordination with the involved industries, and active interaction with other stakeholders.

III. Description of Proposed Standards and Related Provisions

This proposed rulemaking includes a comprehensive program to reduce emissions from nonroad diesel engines and equipment. The significant potential benefits of controlling emissions from these engines provides a major opportunity to address the nation's air quality problems. The proposed program consists of stringent new emission standards, requirements to ensure that engines maintain their level of emission performance as they age, provisions providing compliance flexibility to engine and equipment manufacturers, and a voluntary program to encourage the introduction of low-emitting engines.

A. Emission Standards

EPA is proposing emission standards covering all nonroad diesel engines except for locomotives, engines used in underground mining equipment, and large (rated over 37 kW) engines used in marine applications. Engines not included in this proposal are or will be addressed by other federal programs. EPA is proposing a set of emission standards that vary in level and implementation date, depending on the rated power of the engine and other factors. The Agency believes that the standards proposed in this notice are consistent with the Clean Air Act requirement that standards represent the ''greatest degree of emission reduction achievable'' given the criteria specified by the Act (see Section V below).

In general, emission standards for engines rated between 37 and 560 kW are proposed in two tiers, building on the phase-in schedule adopted in the Tier 1 rule (see Table 1). These standards approximate the degree of control anticipated from existing and proposed standards covering engines used in heavy-duty diesel highway vehicles, with appropriate consideration of differences in the operational characteristics of the engines and in the organization of the industries. Specifically, the first set of proposed standards (Tier 2) generally parallel the emission standards that apply beginning with 1998 model year highway engines (58 FR 15781, March 24, 1993). The second set of proposed standards (Tier 3) parallel standards EPA has proposed for 2004 model year diesel highway engines (61 FR 33421, June 27, 1996). The standards for engines rated over 37 kW would become effective in the 2001 to 2006 time frame for Tier 2 levels and 2006 to 2008 for Tier 3 levels.

TABLE 1.—EMISSION STANDARDS IN G/KW-HR (G/HP-HR)

Engine Power	Tier	Model year	NMHC + NO_X	CO	PM
kW<8 (hp<11)	Tier 1	2000	10.5 (7.8)	8.0 (6.0)	1.0 (0.75)
	Tier 2	2005	7.5 (5.6)	8.0 (6.0)	0.80 (0.60)
8≤kW<19 (11≤hp<25)	Tier 1	2000	9.5 (7.1)	6.6 (4.9)	0.80 (0.60)
	Tier 2	2005	7.5 (5.6)	6.6 (4.9)	0.80 (0.60)
19≤kW<37 (25≤hp<50)	Tier 1	1999	9.5 (7.1)	5.5 (4.1)	0.80 (0.60)
	Tier 2	2004	7.5 (5.6)	5.5 (4.1)	0.60 (0.45)
37≤kW<75 (50≤hp<100)	Tier 2	2004	7.5 (5.6)	5.0 (3.7)	0.40 (0.30)
	Tier 3	2008	4.7 (3.5)	5.0 (3.7)	.....
75≤kW<130 (100≤hp<175)	Tier 2	2003	6.6 (4.9)	5.0 (3.7)	0.30 (0.22)
	Tier 3	2007	4.0 (3.0)	5.0 (3.7)	.....
130≤kW<225 (175≤hp<300)	Tier 2	2003	6.6 (4.9)	3.5 (2.6)	0.20 (0.15)
	Tier 3	2006	4.0 (3.0)	3.5 (2.6)	.....
225≤kW<450 (300≤hp<600)	Tier 2	2001	6.4 (4.8)	3.5 (2.6)	0.20 (0.15)
	Tier 3	2006	4.0 (3.0)	3.5 (2.6)	.....
450≤kW<560 (600≤hp<750)	Tier 2	2002	6.4 (4.8)	3.5 (2.6)	0.20 (0.15)
	Tier 3	2006	4.0 (3.0)	3.5 (2.6)	.....
kW≥560 (hp≥750)	Tier 2	2006	6.4 (4.8)	3.5 (2.6)	0.20 (0.15)

The standards proposed in this notice for engines rated under 37 kW would be the first EPA emission standards for these nonroad diesel engines. The proposed Tier 1 standards would be phased in by power category beginning in 1999, with Tier 2 standards phased in by power category beginning in 2004. Tier 3 standards are not proposed for these engines in this rule.

Table 1 lists the range of standards for the different power categories, including all the tiers of proposed standards with the affected model years. References throughout this notice to the engine power ratings listed in Table 1 will identify only the kilowatt rating. The reader may refer to the table for conversion between metric and English units.

EPA is at this time proposing Tier 3 standards only for nonroad diesel engines rated between 37 kW and 560 kW. For engines rated under 37 kW, the Agency believes it would be inappropriate to commit to Tier 3 standards at this time, since the industry is only now beginning to address emission control requirements for the first time. The uncertainties involved in proposing more than two tiers of standards seem too great at this early stage in the regulation of these engines.

In the case of engines rated over 560 kW, the longer lead time EPA believes is appropriate for these engines shifts the proposed implementation schedule for these engines later than any other

engines for Tier 2 standards, starting with the 2006 model year. This lead time reflects the longer product redesign cycles typical of these large engines with very low sales volumes. The Agency's intent is to avoid imposing unnecessary costs associated with frequently changing standards. As is the case for engines rated under 37kW, the large uncertainties that would be involved in proposing a third tier of standards, in this case presumably for sometime after 2010, led to EPA's decision not to propose such Tier 3 standards for these engines at this time.

Where Tier 3 standards are proposed, the Agency is choosing not to include more stringent PM standards. The Agency recognizes that there is an inverse technological relationship between NO_X and PM emission control and believes that more stringent PM standards may threaten the feasibility of the proposed Tier 3 NO_X standards. In addition, as discussed in Section III.B. below, the Agency believes that investigation during the next few years may conclude that a different emission test cycle is more appropriate for nonroad engines, especially for PM emissions. For these reasons, EPA believes that Tier 3 PM standards will be more appropriately discussed in the context of the improved technical understanding that will exist by the time of the 2001 Feasibility Review (see Section II.B.5. above).

The standards proposed in this docket assume the use of EPA's existing steady-state (modal) test procedures. New steady-state test cycles are proposed for constant-speed engines, marine propulsion engines, and engines rated under 19 kW. The Agency and the industry are working to better understand the sensitivity of nonroad diesel engine emissions to the test cycle, as discussed in the next section.

EPA proposes to change from a measurement of total hydrocarbons to nonmethane hydrocarbons. There is, however, no standardized method for measuring methane in diesel engine exhaust. In the absence of such a procedure, EPA is proposing to allow any of three options: (1) Measure total hydrocarbons in place of nonmethane hydrocarbons, without adjusting numerical values, (2) manufacturers may develop and use their own procedure to analyze nonmethane hydrocarbons, with prior approval from EPA, or (3) measure total hydrocarbons but subtract 2% from the measured hydrocarbon mass to correct for methane. This assumed methane fraction is based on data from two heavy-duty diesel engines.[19]

EPA is aware of the flame ionization detector plus gas chromatography method of determining nonmethane hydrocarbons (SAE J1151) and requests comment on whether this procedure or any other would be appropriate to measure methane. If such a procedure is acceptable, EPA further requests comment on whether a uniform procedure is preferable to the proposed options.

Finally, EPA is proposing to maintain the current smoke standards for nonroad diesel engines rated over 37 kW. The Agency proposes to extend the applicability of these standards to nonroad diesel engines rated under 37 kW. This proposal is discussed in detail in Section III.G.

B. Test Procedures

1. Test Cycles

The test cycle used to measure emissions is intended to simulate some measure of actual operation in the field. Testing an engine for emissions consists of exercising it over a prescribed duty cycle of speeds and loads using an engine dynamometer. The nature of the test cycle used for determining compliance with emission standards during the certification process is critical in evaluating the likely emissions performance of engines designed to those standards. To the extent that in-use operation differs from the certification test, there is the possibility that a certified engine will have higher than expected emission rates in the field. EPA has addressed such concerns in the past; for example, the highway heavy-duty engine test cycles were changed to address transient operation (45 FR 4136, January 21, 1980) and, more recently, EPA has revised the test cycle for light-duty vehicles (61 FR 54852, October 22, 1996).

Because of the potential inadequacies in the ability of test cycles to ensure control in real-life conditions, EPA is very concerned that engines may be designed to control emissions well during a certification test only to emit at higher levels during field operation. EPA has observed at times that manufacturers may tailor the design of their engines to narrowly meet emission test requirements. Also, engine manufacturers have a degree of discretion in how they control engine operation across the whole range of engine operating modes to balance competing demands for power, fuel economy and emission control. The advent of electronic controls has greatly increased the level of sophistication in controlling the full range of engine operation. This advance also carries with it some uncertainty about whether proper control of emission-related engine parameters is maintained during engine operation that is not represented in the certification test cycle. The current nonroad test cycle, with a limited combination of steady-state speeds and loads, does not include some operating modes that are commonly experienced in the field.

Originally, certification testing of heavy-duty highway engines was conducted with steady-state test cycles (one cycle for diesel engines and one for otto-cycle engines), in which an engine is operated at several discrete modes of constant speed and load for measuring emissions. EPA subsequently revised the highway engine test instead to use transient cycles, which continuously vary speeds and loads. Current test requirements for nonroad diesel engines are based on an eight-mode steady-state test cycle similar to the original cycle for highway engines. This test cycle was developed by the International Organization for Standards (ISO) as part of Standard 8178 and is designated as the C1 cycle.

EPA still believes that the C1 cycle is the most appropriate cycle available at this time for ensuring that emissions are controlled in the field. The Agency therefore proposes to continue to rely on the C1 cycle as the principal method of testing nonroad diesel engines. NO_X emission rates depend significantly on the degree of engine loading (as a fraction of its rated capacity); i.e., higher relative engine load, or load factor, corresponds with a greater mass of NO_X emissions for each combustion event. Testing on a limited number of engines—with current technology—shows that total NO_X emissions from the C1 cycle are comparable to those generated on the transient highway test procedure.[20] Engine-to-engine variability is significant, but available data is insufficient to determine any directional difference in the average results. This testing does not provide for conclusions on the possibility of high in-use NO_X emissions from engines that are designed to control emissions only

[19] Springer, Karl J. (1979), ''Characterization of Sulfates, Odor, Smoke, POM and Particulates from Light and Heavy-Duty Engines—Part IX,'' Ann Arbor, Michigan: U.S. Environmental Protection Agency, Office of Mobile Sources. Publication No. EPA–460/3–79–007.

[20] ''Summary of Nonroad Compression Ignition Transient and Steady-State NO_X and PM Emissions Data,'' EPA memorandum from Cleophas Jackson to Docket A–96–40, May 21, 1997.

in modes represented by the certification test procedure. The same testing shows that HC emissions, while more sensitive to test cycle in percentage terms, are formed at much lower levels. The set of engines tested emitted on average about 0.7 g/kW-hr (0.5 g/hp-hr) of HC less on the C1 cycle than on the highway test procedure, which is much less than the variability observed for NO_X emissions. Tested CO emissions were significantly lower on the C1 cycle than on the highway test procedure, which is reflected in the lower numerical emission standards for nonroad engines.

Evaluating the ability of a test cycle to appropriately measure PM emissions, however, requires a review of different parameters than evaluation of comparability for NO_X emissions. Particulate emissions, like NO_X emissions, depend on engine load, but are most sensitive to the degree of transient engine operation. Most nonroad engines are used in applications that include substantial transient operation in use, especially those used to propel motive equipment. Equipment such as pumps and generators operate mostly or exclusively at constant engine speeds, but they may may also depart from steady-state operation due to variation in engine loads over time. EPA believes that the proposed PM emission standards, with a steady-state certification test, will result in a predictable improvement in PM emissions from those engines used in constant-speed applications. Engines experiencing a greater degree of transient operation will also likely have lower rates of PM emissions, though the degree of that reduction is harder to predict. The concern for ensuring an adequate level of control of PM emissions from all nonroad engines has been the principal motivation for EPA to look at the possibility of incorporating an element of transient operation in the certification test. While the proposal includes no testing with a transient cycle, EPA will continue to pursue development of a transient cycle that can be incorporated into certification testing, as described below.

The proposal includes additional cycles for specific engines. The same numerical standards apply to all test cycles. Any engines that are limited to operate only at a constant speed may, at the manufacturer's option, use the ISO D2 cycle for emission testing. This cycle, which omits idle and intermediate-speed modes from the C1 cycle, is representative of engines such as generators, which are designed never to run at these omitted speeds.[21] Because of the more limited range of engine operation in the D2 cycle, manufacturers must ensure that engines certified with data generated with the D2 cycle are used exclusively in constant-speed applications. Accordingly, these engines must include labeling information indicating this limited emission certification.

For engines rated under 19 kW, EPA proposes an additional test cycle, the ISO G2 cycle, though manufacturers may also use the C1 or, for constant-speed engines, the D2 cycle for these smaller engines. The ISO G2 cycle includes the same modes as the D2 cycle and adds a mode for operation at idle. This cycle was developed to represent the operation of small diesel engines used primarily at rated speed, such as in lawn and garden applications, generators, pumps, welders, and air compressors. EPA has investigated the representativeness of this cycle for engines rated under 19 kW and supports the use of this cycle at this time. By capturing operation at rated speed for a variety of engine loads and including operation at idle the G2 cycle seems appropriate for the principal applications of these engines. The Nonroad Statement of Principles specifies only the G2 cycle for engines rated under 19 kW. Since that time, further deliberation has led EPA to allow also the C1 cycle and, in the case of constant-speed engines, the D2 cycle for these engines. As described above, the D2 cycle is appropriate for those engines that are limited to operate only at rated speed. By including more operating modes, the C1 cycle can be considered more broadly representative of a wide range of engine applications, including those rated under 19 kW. While the D2 cycle clearly has a unique role in emission certification, the C1 and G2 cycles here present manufacturers with two optional procedures for all the engines rated under 19 kW that are not certified under the D2 cycle. EPA therefore requests comment on whether it is appropriate or desirable to allow use of both the C1 and G2 cycles for these engines.

EPA proposes that propulsion marine engines rated under 37 kW rely on the E3 cycle for emission testing. The E3 cycle, which consists of engine operation at four different engine speeds and four different loads, was developed by ISO to represent the operation of propulsion marine engines, and has been supported by an Agency investigation.[22] EPA nevertheless requests comment on whether a similar candidate cycle for propulsion marine engines, the ISO E5 cycle, would be equally or more appropriate. The E5 cycle differs from the E3 cycle by including engine operation at idle. In addition, EPA proposes an additional flexibility to marine engine manufacturers to allow marine engines to be included in land-based engine families. This flexibility would enable manufacturers to certify propulsion marine engines on the C1 test cycle, which would be appropriate for marine engines developed from land-based models. Finally, EPA proposes that auxiliary marine engines subject to this rule (i.e., engines installed on a marine vessel, but not used for propulsion) should be tested using the G2, C1, or D2 test cycles, with the constraints described above for the counterpart land-based nonroad engines.

Except for the C1 cycle and the D2 cycle for constant-speed engines, EPA has little data supporting the adequacy of the test cycles described above; however, there also seems to be no information indicating that these cycles are flawed. ISO committees developed the various test cycles intending to capture a representative portion of the in-use operation for particular groups of engines. EPA, supporting efforts to harmonize emission certification requirements with those of other countries, supports the use of ISO test cycles if EPA can find that they are adequate for measuring and controlling in-use emissions. As noted above, EPA has reviewed the E3 and G2 cycles and supports the use of these cycles at this time. Technologies and emission control strategies in the future may, however, become more sensitive to variations in engine operation; EPA will therefore continue to explore the potential benefits of a new or revised test cycle for certifying engines.

The Supplemental ANPRM describes the need to review the adequacy of the certification test procedure, especially as it relates to transient operation in the field. The signatories to the Nonroad Statement of Principles agreed to better characterize in-use engine operation and evaluate the effectiveness of the current test procedure. In the event that the current test procedure would be found inadequate to address air quality concerns, EPA has committed to pursuing a revised test procedure to address the problem. In so doing, the

[21] For a description of the development of the D2 cycle, see ''Exhaust Emission Testing of Diesel Engines for Industrial Applications,'' (Docket A–96–40, item II–D–26).

[22] Selection of Duty Cycle for High-Speed CI Marine Engines,'' EPA memorandum to Docket A–96–40 from Mike Samulski, February 19, 1997.

Agency recognizes several constraints, including the need for a very extensive effort to develop revised test cycles, the importance of the objective of maintaining harmonization of international standards, and the need to re-evaluate the numerical standards with any change in the test procedure. Also, because of the time required to develop revised test cycles and the additional time for engine manufacturers to redesign engines with a new procedure, any change in the test cycle would likely not apply before the implementation of Tier 3 standards.

EPA requests comment on appropriate test cycles for nonroad diesel engines.

2. Test Fuel

In the 1994 final rule, EPA allowed manufacturers to test for certification of PM emission levels using the low-sulfur test fuel specified by the California ARB for nonroad diesel engines. EPA's objective was to minimize any difference from the protocol previously established for California, because EPA finalized PM standards for engines rated over 130 kW only in response to industry's request to adopt California's PM standard, which was not considered technology-forcing. Under current regulations, testing with federal test fuel involves an optional adjustment of measured PM levels to account for the higher PM emissions associated with the higher fuel sulfur content.

EPA is now proposing PM standards that are expected to provide meaningful reductions from all sizes of engines used nationwide. The Clean Air Act accordingly requires EPA to ensure that the test procedure, including fuel specifications, adequately represent in-use operation. Typical nonroad diesel fuel sulfur levels outside of California are about 0.33 weight percent, though nonroad equipment to some degree utilizes highway fuels, which have a maximum allowable sulfur level of 0.05 weight percent.[23] California extends the 0.05 weight percent limit to include both highway and nonroad diesel fuel. Using the calculated adjustment to PM emission levels for fuel sulfur finalized in 1994, the difference between 0.33 and 0.05 weight percent would correlate with a difference of 0.06 g/kW-hr (0.05 g/hp-hr) in PM emission levels. To the extent that in-use emissions are higher with high-sulfur fuel, regulated engines could be operating at levels that significantly exceed certification standards. This raises concerns regarding whether the test fuel is representative of in-use fuels. EPA therefore proposes to require that, beginning with Tier 2 emission standards (Tier 1 standards for engines rated under 37 kW), testing with fuel based on federal specifications be conducted without use of any adjustment to measured PM levels. Testing for NO_X, HC, CO, and smoke is not affected, since the 1994 final rule already specified that federal test fuel was appropriate without adjustment for measuring emissions of those pollutants.

Manufacturers' likely continued interest in using California's test fuel is consistent with EPA's goal of harmonizing certification requirements where possible. EPA will therefore continue this practice as an option for manufacturers. The Agency requests comment on whether there should be an upward adjustment to measured PM levels when engines are tested with low-sulfur fuel. EPA also requests comment on the appropriate form of such a PM adjustment. The current equation for adjusting PM measurements depends on the relationship of PM emission levels to fuel sulfur content and could therefore be modified to adjust PM measurements from testing with low-sulfur fuel. Such a calculation would require selection of a representative in-use fuel sulfur level.

One possible resolution would be to adopt the sulfur specification used for European testing. European test fuel specifications include a fuel sulfur level between 0.1 and 0.2 weight percent sulfur. Testing with fuel sulfur levels between 0.05 and 0.1 weight percent are allowed, but are adjusted upward using the same adjustment equation specified by EPA, referenced to a test fuel with 0.15 weight percent sulfur.

EPA currently specifies test fuel with a range in fuel sulfur levels from 0.05 to 0.5 weight percent. EPA solicits information related to sulfur levels found in in-use fuels, including the degree to which nonroad equipment utilizes highway-grade diesel fuel. EPA will accordingly consider changes to the test fuel specifications to ensure that the test fuel is representative of that used in the field.

Whether or not the manufacturers utilize low-sulfur test fuels and any associated adjustment, EPA would intend to conduct confirmatory testing with federal test fuels, which would not involve any adjustment to measured PM levels.

C. Durability

To achieve the full benefit of the emissions standards, programs are necessary to encourage manufacturers to design and build engines with durable emission controls and encourage the proper maintenance and repair of engines throughout their lifetime. The goal is for engines to maintain good emission performance throughout their in-use operation.

When the Tier 1 standards for engines rated over 37 kW were developed, deterioration was not expected to be a problem for two reasons. First, the Tier 1 standards were not considered by EPA to be technology forcing. Second, the focus was on NO_X control and NO_X emissions were thought not to deteriorate from these engines. As a result, there are few requirements in the current regulations that address deterioration concerns for nonroad diesel engines. As tighter standards are put into place, EPA believes that it becomes necessary to adopt measures to address concerns about possible in-use emission performance degradation.

EPA is proposing to make some changes to the existing durability program, as the new standards are phased in, to help ensure that engines are still meeting applicable standards in use. The specific areas of the durability program that are being focused on here are useful life, warranty period, deterioration factors, allowable maintenance intervals, and rebuilding requirements.

a. Useful Life

Currently, nonroad diesel engines rated over 37 kW are defined, for emission control purposes, to have a useful life of 8,000 hours or 10 years, whichever occurs first. The in-use testing liability period is currently 6,000 hours or 7 years, whichever occurs first. Based on a study performed for EPA, this is representative of the average time until first rebuild for the majority of nonroad diesel engines.[24] EPA is proposing no changes to these requirements.

EPA proposes a shorter useful life and liability period for engines rated under 37 kW. Based on EPA's current understanding, the smaller engines have a shorter life expectancy than larger engines. This is supported by data supplied to EPA on two small engines.[25] According to comments received from some manufacturers, engines rated under 37 kW that operate at higher rated

[23] ''Estimates for In-use Nonroad Diesel Sulfur Levels,'' EPA memorandum from David Korotney to Docket A–96–40, July 1, 1997.

[24] ICF Incorporated, ''Industry Characterization: Nonroad Heavy Duty Diesel Engine Rebuilders,'' prepared for U.S. Environmental Protection Agency, Contract 68–C5–0010, WAN 102, January 3, 1997, (Docket A–96–40, item II–A–02).

[25] Letter from Norman Weir, Yanmar Diesel America Corp., to Don Kopinski, Environmental Protection Agency, March 10, 1997 (Docket A–96–40, II–D–27).

speeds (<3000 rpm) have a shorter life expectancy than engines rated under 37 kW that operate at lower speeds.[26] EPA believes that these comments are reasonable. Table 2 presents the proposed useful lives and in-use testing liability periods. EPA requests comment on the appropriateness of the proposed useful lives for engines rated under 37 kW (land-based and marine). EPA is also interested in any durability data on nonroad diesel engines, especially those rated under 37 kW.

TABLE 2.—PROPOSED USEFUL LIFE AND RECALL TESTING PERIODS

Power rating	Rated engine speed	Useful life		Recall testing period	Hours
		Hours	Years		Years
< 19 kW	All	3000	5	2250	4
19–37kW ..	Constant speed engines 3000 rpm	3000	5	2250	4
	All others	5000	7	3750	5

Liability periods were proposed based on the ratio of useful life and liability periods established for engines rated over 37 kW. The purpose of the shorter liability periods is to ensure that engines used in recall testing are not statistical outliers with poor emissions durability. If a recall were ordered, all engines in that family would be subject to the recall regardless of their age.

EPA also requests comment on the appropriateness of basing the useful life on the typical time until first rebuild. The ICF report cited above reports that the average time until retirement for nonroad diesel engines is between 12,000 and 14,000 hours. According to this information, no one would be liable for the emission performance of these engines for a large percentage of their overall operation. EPA understands, however, that an appropriate useful life is needed to protect manufacturers from recall testing being based on engines that continue to perform beyond the emission control design life and are not representative of typical use.

b. Warranty Period

Tied to the useful life is the minimum warranty period imposed by the Clean Air Act. Currently, the minimum warranty period for nonroad diesel engines rated over 37 kW is 3,000 hours or 5 years of use, whichever occurs first. EPA proposes to extend this minimum warranty period to engines rated between 19 and 37 kW; however, for engines rated under 19 kW, EPA proposes a warranty period of 1,500 hours or 3 years, whichever occurs first. A shorter warranty for engines rated under 19 kW is proposed due to the shorter useful lives, and the three year warranty period for small engines is consistent with current warranty practice. EPA requests comment on the appropriateness of the proposed warranty period.

c. Deterioration Factors

In the Tier 1 nonroad engine rule, EPA did not require manufacturers to accumulate operating time on durability data engines or to generate deterioration factors for engine certification because that rule focused almost entirely on modest reductions in NO_X emissions. Analysis of highway engine data at that time led EPA to conclude that heavy-duty diesel engines do not generally produce more NO_X emissions as they get older. EPA believes that this stability of emission control can be attributed to the fact that diesel engine manufacturers have met emission standards through internal improvements to the engine and fuel systems, rather than relying on aftertreatment and other devices that would be more susceptible to in-use degradation. In fact, engine deterioration in current technology nonroad diesel engines could result in lower NO_X emission levels due to a loss in cylinder compression.

As NO_X, HC, and PM standards are reduced and nonroad diesel engine manufacturers introduce new technologies solely for emission control purposes, such as aftertreatment, sophisticated fuel delivery controls, and exhaust gas recirculation (EGR), long-term emissions performance becomes a greater concern. In addition, emission deterioration characteristics are not well known for aftertreatment, EGR, and other more sophisticated emission-control strategies.

EPA proposes to require the application of a deterioration factor (DF) to all engines covered by this rule. The DF is a factor applied to the certification emission test data to represent emissions at the end of the useful life of the engine. Currently, DFs are required for highway heavy-duty engines but are only required for nonroad diesel engines rated over 37 kW if engines use aftertreatment technologies. Deterioration factors would be determined by the engine manufacturers in accordance with good engineering practices. EPA is not proposing a specified procedure. The deterioration factors would, however, be subject to EPA approval. EPA requests comment on the need for and application of DFs.

It is not EPA's intent to force a great deal of data gathering on engines using established technology for which the manufacturers have the experience to develop appropriate DFs. New DF testing may not be needed where sufficient data already exists. EPA's main interest is that technologies with unproven durability in nonroad applications, such as EGR, are demonstrated to meet the proposed emission requirements throughout their useful lives. However, because this rule creates a program that will introduce new standards and new technologies over many years, the DF requirement is being proposed for all engines so that EPA can be sure that reasonable methods are being used to ascertain the capability of engines to meet standards throughout their useful lives. This proposed DF program would allow EPA to act in the traditional role of establishing emission performance standards, rather than putting EPA in a position where it would appear to be prejudging the durability of specific technologies and designs.

Similar to the provisions for highway engines, EPA proposes to allow the nonroad engine manufacturers the flexibility of using carryover and carryacross of durability emission data from a similar engine that has either been certified to the same standard or for which all of the data applicable for certification has been submitted. In addition, EPA proposes to extend this flexibility to allow deterioration data from highway engines to be used for similar nonroad engine families.

EPA is especially concerned that an unnecessarily burdensome durability

[26] Letter from Dr. Hartmut Mayer, Euromot, to Donald Kopinski, Environmental Protection Agency, January 16, 1997 (Docket A–96–40, II–D–32).

demonstration not be required for engines using established technology for which the manufacturers have the experience to determine appropriate deterioration factors. In these cases, EPA proposes to allow nonroad engine manufacturers to perform an analysis, based on good engineering practices, in place of actual service accumulation. For instance, in the case where no durability data exists for a certain engine but both smaller and larger engines using similar technology have been shown not to deteriorate for NO_X in use, it would be possible to build a case showing no NO_X deterioration for that engine.

EPA proposes that engines using established technology, for the purposes of this program, are engines that do not meet the proposed Tier 3 NMHC+NO_X and PM emission standards. However, EPA specifically proposes to exclude engines using exhaust gas recirculation or aftertreatment from being considered as using established technology. In the case where a manufacturer believes that a given engine is using established technology even though it meets the Tier 3 NMHC+NO_X and PM levels, EPA proposes that, prior to applying for certification, the manufacturer would be able to petition the Administrator to consider the given engine as using established technology.

In the past, in on-highway engine certification, durability data have been used for many years through carryover and carryacross of data. One concern is that, with repeated incremental changes in a nonroad engine design, the data would become unrepresentative for the engine applying for certification. EPA requests comment on how to ensure that carryover and carryacross data is appropriate (for example, by including limit on how long data could be used). EPA also requests comment on alternatives to the durability program described here which would result in better, and more cost-effective, confirmation of in-use emissions performance.

d. Allowable Maintenance Intervals

Manufacturers are currently required to furnish the ultimate purchaser of each new nonroad engine with written instructions for the maintenance needed to ensure proper functioning of the emission control system. Generally, manufacturers require the owners to perform this maintenance as a condition of their emission warranties. If such required maintenance is more than the engine owner is likely to perform due to cost or inconvenience, then in-use emissions deterioration can result. For highway diesel engines, EPA imposes limits on the frequency of maintenance that can be required of the engine owners for emission-related items; these limits also apply to the engine manufacturer during engine certification and durability testing. Further, the performance of maintenance would be considered during any in-use recall testing conducted by the Agency.

Currently, EPA specifies no minimum allowable maintenance intervals for nonroad diesel engines. EPA believes, however, that allowable maintenance intervals for nonroad engines are necessary to ensure that the technology is practical in use. Because the actual maintenance intervals for nonroad engines are likely to be similar to highway engines, EPA believes that maintenance requirements should parallel those for highway engines (40 CFR 86.094–25). EPA therefore proposes the following minimum intervals for adjustment, cleaning, repair, or replacement of various components.

At 1,500 hours and 1,500 hour intervals thereafter:

1. EGR related filters and coolers.
2. Positive crankcase ventilation valve.
3. Fuel injector tips (cleaning only).

At 3,000 hours and 3,000-hour intervals thereafter for engines rated under 130 kW, 4,500-hour intervals thereafter for engines rated over 130 kW:

1. Fuel injectors.
2. Turbocharger.
3. Electronic engine control unit and its associated sensors and actuators.
4. PM trap or trap-oxidizer system.
5. EGR system (including all related control valves and tubing).
6. Catalytic convertor.
7. Any other add-on emissions-related component.

Add-on emission-related components are those whose sole or primary purpose is to reduce emissions or whose failure will significantly degrade emission control, yet not significantly affect the performance of the engine.

Consistent with the definition for highway engine maintenance requirements, EPA proposes to define the following components as critical emission-related components:

1. Catalytic convertor.
2. Electronic engine control unit and its associated sensors and actuators.
3. EGR system (including all related filters, coolers, control valves and tubing).
4. PM trap or trap-oxidizer system.
5. Any other add-on emissions-related component.

If maintenance is scheduled on critical emission-related components in-use, EPA proposes that the manufacturer be required to show the reasonable likelihood that the maintenance will be performed in-use. In the proposed regulations, EPA lists the same manufacturer options for showing that maintenance is likely to be performed in-use as are currently included in the highway program. This list includes showing that performance would degrade without maintenance, survey data showing that the maintenance is performed, using a visible signal system, free maintenance provided by the manufacturer, and other methods approved by the Administrator.

EPA requests comment on the need for allowable maintenance intervals and the appropriateness of the intervals proposed here. EPA also requests comment on the appropriateness and need for the proposed critical emission-related scheduled maintenance requirements.

e. Rebuilding Requirements

EPA has two concerns regarding the rebuilding of nonroad diesel engines, both related to new emission-related components that may be added to the engine to meet the new standards. First, EPA is concerned that during engine rebuilding, there may not be an incentive to check and repair emission controls that do not affect engine performance. Second, EPA is concerned that there may be an incentive to rebuild engines to an older configuration due to real or perceived performance penalties associated with technologies that would be used to meet the standards proposed in this notice. Such practices would likely result in a loss in emission control.

Under the current program, there are no specific rebuilding requirements for nonroad diesel engines. However, there is a tampering provision that states ''the manufacturer or rebuilder of the part may certify according to 40 CFR 85.2112 that use of the part will not result in a failure of the engine to comply with emission standards.'' [27] For highway engines, engine rebuilding practices are currently addressed in general terms under EPA policies established under Clean Air Act section 203(a)(3) regarding tampering. Under a separate action for highway heavy-duty engines, EPA has proposed to add the highway policies to the regulations as they apply to tampering and has also proposed new measures.[28] EPA's intent is to propose the same rebuilding requirements for nonroad diesel engines as those

[27] 40 CFR 89.1007.

[28] Environmental Protection Agency, ''Control of Emissions of Air Pollution from Highway Heavy-Duty Engines; Notice of Proposed Rulemaking,'' 61 FR 33421, June 27, 1996.

proposed to be put into place for heavy-duty highway engines starting with the 2004 model year.

EPA proposes that parties involved in the process of rebuilding or remanufacturing engines (which may include the removal of the engine, rebuilding, assembly, reinstallation and other acts associated with engine rebuilding) must follow the provisions listed below to avoid tampering with the engine and emission controls. The applicability for these provisions is proposed to be based on the build date of the engine. The rebuild requirements apply to any engine built on or after the date that new standards, proposed in this rule, go into effect for a specific engine category, regardless of the emission levels that the engine is designed to achieve.

(1) EPA proposes that, during engine rebuilding, parties involved must have a reasonable technical basis for knowing that the rebuilt engine is equivalent, from an emissions standpoint, to a certified configuration (i.e., tolerances, calibrations, and specifications).

(2) When an engine is being rebuilt and remains installed or is reinstalled in the same piece of equipment, it must be rebuilt to a configuration of the same or later model year as the original engine. When an engine is being replaced, the replacement engine must be an engine of (or rebuilt to) a configuration of the same or later model year as the original engine.

(3) At the time of rebuild, emission-related codes or signals from on-board monitoring systems may not be erased or reset without diagnosing and responding appropriately to the diagnostic codes. Diagnostic systems must be free of all such codes when the rebuilt engines are returned to service. Further, such signals may not be rendered inoperative during the rebuilding process.

(4) When conducting an in-frame rebuild or the installation of a rebuilt engine, all emission-related components not otherwise addressed by the above provisions must be checked and cleaned, repaired, or replaced where necessary, following manufacturer recommended practices.

Under this proposal, any person or entity engaged in the process, in whole or part, of rebuilding engines who fails to comply with the above provisions may be liable for tampering. Parties would be responsible for the activities over which they have control and as such there may be more than one responsible party for a single engine in cases where different parties perform different tasks during the engine rebuilding process (e.g., engine rebuild, full engine assembly, installation). EPA is not proposing any certification or in-use emissions requirements for the rebuilder or engine owner. EPA requests comment on the appropriateness of applying this rebuild program to nonroad engines.

EPA is proposing to adopt modest record keeping requirements that EPA believes are in line with customary business practices. The records would be kept by persons involved in the process of nonroad engine rebuilding or remanufacturing and shall include the hours at time of rebuild and a list of the work performed on the engine and related emission control systems, including a list of replacement parts used, engine parameter adjustments, design element changes, and work performed as described in item (4) of the rebuild provisions above. EPA proposes that such records be kept for two years after the engine is rebuilt.

Under this proposal, parties would be required to keep the information for two years but would be allowed to use whatever format or system they choose, provided that the information can be readily understood by an EPA enforcement officer. EPA proposes that parties would not be required to keep information that they do not have access to as part of normal business practice. In cases where it is customary practice to keep records for engine families rather than specific engines, where the engines within that family are being rebuilt or remanufactured to an identical configuration, such record keeping practices are proposed to be satisfactory. Rebuilders would be able to use records such as build lists, parts lists, and engineering parameters that they keep of the engine families being rebuilt rather than on individual engines, provided that each engine is rebuilt in the same way to those specifications. EPA requests comments on the appropriateness of the proposed record keeping requirements including whether the records should be kept for a longer period of time such as for five years.

D. Averaging, Banking, and Trading

With this notice, EPA is proposing to replace the existing nonroad engine averaging, banking, and trading (ABT) program with a comprehensive new program. The proposed program is intended to enhance the flexibility offered to engine manufacturers that will be needed in meeting the stringent NMHC + NO_X standards and the PM standards being proposed. The proposed changes to the ABT program have been made in tandem with the proposed emission standards. This allows EPA to propose the most stringent emission standards that should apply with the proposed ABT program, while providing the flexibility and cost benefits to manufacturers who have to meet the technical challenges of the lower standards. It should be noted that as part of the 2001 feasibility review described earlier, the Agency plans to reassess the appropriateness of the averaging, banking, and trading provisions applicable to nonroad diesel engines and modify the provisions if deemed necessary.

The proposed changes come in the context of the existing ABT program for nonroad engines, which was adopted in 1994 (see 59 FR 31306, June 17, 1994). The existing program covers diesel engines rated over 37 kW and is available for NO_X emissions only. The three aspects of the ABT program (averaging, banking, and trading) are described in the following paragraphs.

Averaging means the exchange of emission credits among engine families within a given engine manufacturer's product line. Averaging allows a manufacturer to certify one or more engine families at levels above the applicable emission standard (but below a set upper limit). However, the increased emissions must be offset by one or more engine families within that manufacturer's product line certified below the same emission standard, such that the average emissions from all the manufacturer's families (weighted by engine power and production volume) are at or below the level of the emission standard. Averaging results are calculated for each specific model year. The mechanism by which this is accomplished is certification of the engine family to a ''family emission limit'' (FEL) set by the manufacturer, which may be above or below the standard. An FEL that is established above the standard may not exceed an upper limit specified in the ABT regulations. Once an engine family is certified to an FEL, that FEL becomes the enforceable emissions limit used to determine compliance during assembly line testing and in-use compliance testing.

Banking means the retention of emission credits by the engine manufacturer generating the credits for use in future model year averaging or trading. Under the existing program, banked credits have a three year life. EPA believes banking improves the feasibility of meeting standards, including the development and early introduction of advanced emission control technology, which allows certain engine families to act as trail blazers for new technology. This can

help provide valuable information to manufacturers on the technology prior to manufacturers needing to apply the technology throughout their product line. It can also provide valuable information for use in other regulatory programs. An incentive for early introduction arises because the banked credits can subsequently be used by the manufacturer to ease the compliance burden of new, more stringent standards.

Trading means the exchange of emission credits between engine manufacturers which can then be used for averaging purposes, banked for future use, or traded to another engine manufacturer. Trading can be advantageous to smaller manufacturers who might have limited opportunity to optimize their costs through the use of averaging. Trading can also be advantageous to larger manufacturers because extending the effective averaging set through trading can allow for overall optimization of costs across manufacturers.

As described later in this section, EPA is proposing significant changes to the existing ABT program for nonroad diesel engines. Behind these changes is the recognition that the proposed standards represent a major technological challenge to the industry. ABT provisions can ease the need to bring all engines into compliance during the exact year the proposed new standards would take effect by allowing credits to be used, for example, to temporarily offset emissions from some particularly difficult to control engine line. While the existing ABT provisions were designed with these same general goals in mind, EPA believes that the nature of the challenge presented by standards proposed in this notice justifies efforts to increase the flexibility of the ABT program. The Agency wishes to maximize the flexibility and incentives for early introduction of technology which ABT offers without limiting the air quality benefits of the proposed standards. This will help ensure that the proposed new standards will, in fact, be attainable for the manufacturers, will be met at the lowest cost, and will still achieve the expected emissions benefit from the proposed standards.

The ABT program contained in this proposal would apply to all nonroad diesel engines covered by this notice. The following discussion of the proposed ABT provisions is divided into two sections. The first section describes the proposed provisions for engines rated over 37 kW. The second section describes the proposed provisions for those engines rated under 37 kW, including land-based and marine engines, both of which are currently unregulated by EPA. Readers are encouraged to review the draft regulations for a fuller understanding of how the proposed ABT program would operate. In addition to those areas specifically highlighted, the Agency solicits comments on all aspects of the proposed ABT changes, including comments on the benefit of these changes to manufacturers in meeting the proposed emission standards and any potential air quality impacts which might be associated with them.

1. Proposed Program for Engines Rated Greater Than or Equal to 37 kW

EPA is proposing to implement several new provisions upon finalization of the proposed standards. The following section is divided into two subsections and describes the proposed changes to the ABT program for engines greater than or equal to 37 kW. The first subsection describes the general provisions applicable to all engines. The second subsection describes several provisions specific to engines certified to the existing Tier 1 standards for engines greater than or equal to 37 kW.

i. General Provisions: Beginning with the proposed Tier 2 standards, the form of the standard changes from separate HC and NO_X standards to a combined NMHC + NO_X standard. Therefore, once the proposed Tier 2 standards take effect, credits will be based on combined NMHC + NO_X values. In the Tier 2 time frame, NMHC + NO_X credits will be generated against the proposed Tier 2 standards, which vary from 6.4 to 7.5 g/kW-hr (4.8 to 5.6 g/hp-hr), depending on the power rating of the engine. In the Tier 3 time frame, NMHC + NO_X credits will be generated against the proposed Tier 3 standards, which vary from 4.0 to 4.7 g/kW-hr (3.0 to 3.5 g/hp-hr), depending on the power rating of the engine.

The existing Tier 1 ABT program for nonroad engines does not cover PM emissions. Based on the certification levels of Tier 1 engines, the Tier 2 PM standards contained in the proposal will require manufacturers to reduce the PM levels of their engines. In addition, the proposed NMHC + NO_X standards will affect the manufacturer's ability to comply with the proposed PM standards due to the tradeoff between NO_X emissions and PM emissions which exists for diesel engines. Therefore, beginning with the introduction of Tier 2 engines, EPA is proposing to include PM emissions in the ABT program in order to provide manufacturers with greater flexibility in complying with the proposed PM standards. (As described later, EPA is proposing to allow the early banking of PM credits from Tier 1 engines under certain conditions.) All PM credits will be generated against the proposed Tier 2 standards until EPA adopts subsequent PM standards. Because EPA is proposing to include both NMHC + NO_X and PM in the ABT program, EPA is also proposing to prohibit manufacturers from generating credits on one pollutant while using credits on another pollutant all on the same engine family. EPA believes such a provision is important given the tradeoff between NO_X and PM emissions which exists for diesel engines.

As discussed earlier, EPA is planning to assess the adequacy of the current steady-state test procedure in an effort to determine if the expected emission benefits are being realized in use. EPA is concerned that PM reductions required on the current steady-state certification test will not result in similar reductions in use and could possibly, under some situations, even result in an increase in in-use emissions. Given the lack of sufficient information to confirm these concerns, EPA still believes it is appropriate to include PM emissions in the ABT program at this time. However, should EPA determine that the current test procedure is inadequate and the expected in-use emission benefits are indeed not being fully realized, it would, of course, be inappropriate to allow the unconsidered use of credits generated under the current test procedure to demonstrate compliance under a future, more appropriate test procedure. EPA would therefore need to reassess the appropriateness of the PM provisions for any Tier 3 standards, taking into consideration the amount of credits generated up to that point or taking the expected credit balances into account in setting the Tier 3 PM standard levels.

EPA is also proposing FEL upper limits that go with these new proposed standards. EPA believes the proposed FEL upper limits provide the manufacturers adequate compliance flexibility while protecting against the introduction of unnecessarily high-emitting engines. EPA requests comment on the appropriateness of the proposed upper limits. EPA is proposing a NMHC + NO_X FEL upper limit of 10.5 g/kW-hr (7.9 g/HP-hr) for engines greater than or equal to 130 kW certified in the Tier 2 time frame. The proposed NMHC + NO_X FEL upper limit is based on the existing Tier 1 NO_X and HC standards of 9.2 and 1.3 g/kW-hr (6.9 and 1.0 g/HP-hr), respectively.

Engines between 37 and 130 kW do not currently have to show compliance with an HC standard. However, data from those engines currently certified with EPA show that these engines are below the 1.3 g/kW-hr (1.0 g/HP-hr) HC level. Therefore, EPA is proposing the same NMHC + NO_X FEL upper limit of 10.5 g/kW-hr for Tier 2 engines greater than or equal to 37 kW and less than 130 kW. For Tier 3 engine families, EPA proposes that the NMHC + NO_X FEL upper limit be the Tier 2 NMHC + NO_X standards for the same power category of engines.

For PM, EPA is proposing a PM FEL upper limit of 0.54 g/kW-hr (0.40 g/HP-hr) for engines greater than or equal to 130 kW certified in the Tier 2 time frame. The proposed PM FEL upper limit is based on the existing Tier 1 PM standard. Engines between 37 and 130 kW do not currently have to show compliance with a PM standard. Therefore, EPA is proposing a PM FEL upper limit of 1.2 g/kW-hr for Tier 2 engines greater than or equal to 37 kW and less than 130 kW. This level represents a typical PM level for uncontrolled engines based on an EPA report.[29] (EPA is not proposing a PM FEL upper limit beyond Tier 2 because EPA is not proposing Tier 3 PM standards at this time.)

Upon finalization of the new standards, EPA is proposing to replace the three year credit life provision of the existing ABT program with no limit on credit life. EPA believes that unlimited life is warranted given the stringency of the proposed standards. An unlimited credit life will promote the feasibility of the proposed standards because it increases the value of the credit to the manufacturer by providing greater flexibility. It is consistent with the emission reduction goal of ABT, not only because of the increased manufacturer incentive but also because it eliminates the ''use or lose'' aspect of the existing program's limit on credit life which creates the perverse incentive for manufacturers to use credits as quickly as possible. As a result, unused credits, which are extra emission reductions beyond what the EPA regulations require, may remain off the market longer. EPA also believes that removing credit life limits for the cleaner engines will provide maximum incentive for the development and introduction of clean engines with emission levels approaching the research objectives of the Nonroad Statement of Principles which are 2.0 g/kW-hr (1.5 g/hp-hr) NO_X and 0.07 g/kW-hr (0.05 g/hp-hr) PM.

EPA is proposing to eliminate the ''buy high/sell low'' power conversion factor provision of the existing ABT regulations and to replace it with the sales-weighted average power value beginning in Tier 2. Currently, when a manufacturer generates credits, the credits are based on the minimum power configuration in a family. When a manufacturer goes to use credits, the credits are based on the maximum power configuration in the family. In other words, credit generation is calculated based on the configuration which generates the least benefit within the family while credit use is based on the configuration which requires the most credits to comply. In some cases this can result in a sizeable offset. Based on experience with the ABT program for highway heavy-duty engines, EPA does not believe such an offset is necessary. This provision tends to introduce a penalty for credit generating engines, thus reducing the benefits of the ABT program for manufacturers. Therefore, EPA proposes to base both credit generation calculations and credit usage calculations on the sales-weighted average power values within each engine family. EPA has already proposed to incorporate this same change into the highway heavy-duty diesel engine ABT program (61 FR 33421, June 27, 1996) and requests comment on the appropriateness of such a change for the nonroad ABT program.

EPA is proposing to include an adjustment in the calculation of credits for the useful life of the engine. The existing ABT program does not include any adjustment for useful life to the credit calculations. All engines covered under the Tier 1 standards were assumed to have the same useful life of 8,000 hours. Therefore, in light of the fact that manufacturers are allowed to use credits across all power categories under the existing Tier 1 program, it was not necessary to adjust the value of the credits for different engine lifetimes. However, as discussed earlier, EPA is proposing to adopt useful life periods for engines below 37 kW that vary from 3,000 hours to 5,000 hours. In addition, as discussed later, EPA is also proposing to allow ABT credits to be used across some of the power categories where useful life will vary. Therefore, in order to appropriately determine the relative value of credits generated and the relative amount of credits used by different engines over their regulatory lifetime, EPA is proposing to include useful life in the equations used to calculate credits generated or credits used under the ABT program.

Another factor applied in the highway heavy-duty engine program that EPA is not proposing to include in the credit calculation for the nonroad program is related to engine load factor. Load factor refers to the percentage of maximum power at which an engine operates. An engine class that operates at a higher load would burn more fuel, and therefore, generate more emissions during an hour of operation. Including the load factor in the equation would lead to a more accurate estimation of in-use emissions and would be necessary if EPA were proposing to allow credits from the nonroad ABT program to be transferred to other emission trading programs, such as the Open Market Trading Program. No adjustment to the credit calculations for load factor is proposed under this rule because there do not appear to be distinct and varied load factors for different types of engines regulated under this rule.[30] As an indicator, the D2 and G2 test cycles have load factors of about 47% and the C1 test cycle has a load factor that is generally around 50±5%. However, the decision not to propose the inclusion of a load factor term to the credit calculations should not be interpreted to mean that this factor would not be appropriate for any future efforts. For example, marine engines have two very distinct engine applications: recreational and commercial. Commercial marine engines often have useful lives ten times longer and load factors two times greater than recreational marine engines. As noted below, EPA's diesel marine rule is currently under development and may need to address these differences as part of that proposal.

As discussed later in more detail in the equipment manufacturer flexibility section, EPA is proposing that engine manufacturers be given the option to trade the NMHC + NO_X and PM credits generated by their engines to equipment manufacturers. Equipment manufacturers could use these credits to increase their options under the equipment manufacturer flexibility provisions.

There are two remaining areas on which EPA is requesting comment. First, EPA requests comment on the inclusion of engines certified to meet the State of California's standards in the

[29] ''Nonroad Engine and Vehicle Emission Study'' (NEVES), U.S. EPA, EPA Report Number 21A–2001, November 1991 (available in Air Docket A–96–40).

[30] There are a wide range of load factors for in-use nonroad diesel engines which are a result of the wide variation of nonroad equipment applications. However, EPA believes that any attempt to track these load factors for the purposes of credit calculations would be overly burdensome and would have no real emissions benefit since the credits are only allowed to be used in within the nonroad ABT program.

proposed ABT program. Currently, manufacturers may not include engines certified for California in the ABT program. Although the California ARB is expected to adopt the same standards that EPA is proposing today, they have not yet proposed such changes to their diesel nonroad program. Therefore, EPA does not believe that it can propose to include such engines in the revised ABT program at this time without knowing the full details of California's program.

Second, EPA is requesting comment on whether there should be restrictions on trading PM credits across the different power categories for which EPA is proposing standards. Based on the emission levels of Tier 1 engines certified with EPA, the PM levels of engines between 75 and 130 kW appear to be similar to those of engines between 130 and 560 kW. (At this point, EPA has very little PM emissions data on engines between 37 and 75 kW that are required to be certified by January 1998.) Under the proposal, the Tier 2 PM standards for engines less than 130 kW will be higher than the Tier 2 PM standards for engines greater than 130 kW. Based on the limited certification information, EPA has concerns that engines in one power category could generate PM credits against higher standards and then use those credits for showing compliance with another power category of engines with a lower standard. For this reason, EPA is requesting comment on limiting the use of PM credits to the power category in which the credits were generated.

ii. Special Provisions for Tier 1 Engines: As described above, EPA is proposing to replace the existing ABT program with a comprehensive new program. Based on EPA's experience with Tier 1 certification and because of implementation differences between the existing Tier 1 provisions and the proposed Tier 2 and later provisions, EPA is proposing two changes that will specifically affect engines certified to the existing Tier 1 standards. First, EPA is proposing a methodology for calculating NO_X credits earned with Tier 1 engines that can be used for showing compliance with the proposed Tier 2 NMHC + NO_X standards. Second, EPA is proposing to allow engine manufacturers to bank early PM credits that can be used once the proposed Tier 2 standards take effect. Both of these proposed changes are described in more detail below. The proposed changes in the general provisions, described above, including the unlimited life, use of average power for credit calculations, and useful life adjustment, will also apply to engines certified to the existing Tier 1 engines. EPA believes these changes are warranted for Tier 1 engines given the stringency of the proposed standards. Also these proposed changes are consistent with the feasibility of the proposed standards because they increase the value of the credits to the manufacturer by providing greater flexibility.

With regard to the generation of NO_X credits from engines certified to the existing Tier 1 standards, EPA is proposing to continue to allow manufacturers to earn NO_X credits, but not NMHC + NO_X credits. The NO_X credits earned on engines certified to the existing Tier 1 standards could be used to show compliance with the proposed Tier 2 NMHC + NO_X standards. Under the existing Tier 1 regulations, manufacturers are required to meet separate HC and NO_X standards. However, as noted earlier, beginning with the proposed Tier 2 standards, the form of the standard changes to a combined NMHC + NO_X standard. Based on EPA certification information for engines between 130 and 560 kW, the sales-weighted average HC levels of Tier 1 engines are 0.5 g/kW-hr, well below the 1.3 g/kW-hr standard. EPA believes the Tier 1 HC standard did not require manufacturers to reduce HC emissions, and therefore, allowing manufacturers to earn NMHC + NO_X credits against the combined Tier 1 HC and NO_X standards would provide manufacturers with false HC credits. For this reason, EPA is proposing to allow manufacturers to earn NO_X credits, and not NMHC + NO_X credits, on Tier 1 engines.

With regard to the calculation of NO_X credits from Tier 1 engines that are to be banked or traded, EPA is proposing that an adjustment be made in the calculation unless the engine on which the credits were earned is below the applicable standards by a specified amount. EPA believes an adjustment to the NO_X credits from certain Tier 1 engines is necessary to prevent the possibility of a significant delay in the introduction of engines meeting the proposed Tier 2 NMHC + NO_X standards. Based on certification information for current Tier 1 nonroad engines, if EPA allowed engine manufacturers to generate NO_X credits against the Tier 1 standard from all engines, they could potentially generate a large number of NO_X credits, and thereby significantly delay compliance with the proposed Tier 2 standards. Furthermore, the smaller incremental reductions from those engines only slightly below the standard are less likely to represent the cleaner, pull-ahead technologies which ABT is designed to encourage. However, these smaller credits do represent early reductions and do have some value given the stringency of the Tier 2 standards.

EPA is proposing to implement a trigger as a mechanism to distinguish between Tier 1 engine families which are eligible for no adjustment and those families which must be adjusted. For engine families certified with a NO_X FEL at or below 8.0 g/kW-hr NO_X, no adjustment would be applied to any NO_X credits. EPA has set 8.0 g/kW-hr NO_X to be a reasonable discriminator for pull-ahead technology based on the certification levels and technologies used to comply with the existing Tier 1 standards. For engine families certified at a NO_X FEL above the 8.0 g/kW-hr trigger in the Tier 1 time frame, an adjustment that reduces the value of the credits by 35 percent would be applied to the NO_X credits. EPA requests comment on the proposed level to be used for adjusting the converted Tier 1 NO_X credits. The proposed level was selected based on a combination of factors. If the rate is set too high, EPA would create a significant disincentive for the introduction of progressively improved technology. There may also be some incentive for manufacturers to marginally recalibrate engines at higher NO_X levels for improved operating characteristics such as fuel economy. Conversely, if EPA set the rate too low (or proposed no adjustment at all), there would be little incentive to develop and implement truly cleaner technology than currently exists. EPA believes an adjustment of 35 percent for credits generated at NO_X FELs above 8.0 g/kW-hr, strikes a balance between these dynamics.

With regard to PM, EPA is proposing to allow early banking of PM credits from Tier 1 engines, under certain conditions, as soon as the proposed standards are finalized. Under the proposal, an engine will be eligible to generate PM credits as long as the engine meets the Tier 1 NO_X standard of 9.2 g/kW-hr. For those eligible engines, the number of PM credits generated will be calculated against the proposed Tier 2 standards and may only be used to show compliance once the Tier 2 PM standards take effect. EPA is not proposing to apply the trigger or credit adjustment concept to PM credits because the proposed provisions for PM credits already require credits generated in the Tier 1 time frame to be calculated against the significantly more stringent proposed Tier 2 standards. Based on certification information for current Tier 1 nonroad engines, if EPA allowed manufacturers to bank credits against the relatively loose Tier 1 PM standard,

manufacturers could potentially generate a large number of PM credits, and thereby significantly delay compliance with the proposed Tier 2 standards. EPA's main objective in ABT is to increase the feasibility of the proposed standards by allowing manufacturers to meet more stringent standards for certain engine families, allowing manufacturers more flexibility and lead time in bringing emissions for more problematic families down to the level of the standards. It is not designed to allow manufacturers to delay compliance with new standards for a long period of time for large numbers of engines. EPA requests comment on the appropriateness of the 9.2 g/kW-hr NO_X level as a limiting factor for whether PM credits can be generated by an engine family.

EPA requests comment on two additional changes for Tier 1 engines that EPA is considering adopting upon finalization of the proposed standards. First, EPA is considering adopting a safety net approach regarding the use of the NO_X credits generated from Tier 1 engines used in the Tier 2 time frame. As noted earlier, manufacturers have the potential to earn a large number of credits from current Tier 1 engines that could be used to significantly delay the introduction of engines meeting the Tier 2 standards. Although EPA doesn't expect this situation will occur, EPA is considering adopting a provision that would apply an additional 10 percent surcharge to the NO_X credits used by a manufacturer if they use credits to certify more than 20 percent of their fleet in the first or second year a Tier 2 standard applies in a given power category. EPA believes such a provision would provide manufacturers with sufficient compliance flexibility while, at the same time, encouraging them to reasonably limit the number of engines certified through ABT as the proposed standards take effect. EPA requests comment on the level of both the surcharge and the level at which the surcharge would apply.

Second, EPA is requesting comment on limiting the number of years for which early PM credits would be available. Assuming EPA finalizes the proposed standards prior to the beginning of the 1999 model year, manufacturers would have the potential to bank early PM credits for between two to seven years. This increases the chances that manufacturers could potentially generate a large number of PM credits, and thereby delay compliance with the proposed Tier 2 standards for many engines. Therefore, EPA is requesting comment on limiting the availability of early PM credits to the three years prior to when the applicable Tier 2 standards take effect.

2. Proposed Program for Engines Rated Under 37 kW

As noted earlier, EPA is proposing standards for engines rated under 37 kW, which are currently unregulated by EPA. Therefore, the existing ABT program does not apply to such engines. EPA is proposing provisions to include both land-based and marine engines rated under 37 kW in the ABT program. A number of provisions are being addressed for these engines, including credit generation, credit life, credit calculation, trading across power categories, credit exchange between land-based and marine applications, and a special multi-year averaging and banking program.

With regard to credit generation, EPA is proposing to make credits available for both NMHC + NO_X emissions and for PM emissions as soon as the standards are finalized. However, because of the kinds of technologies typically used by these engines, it is necessary to put some restrictions on how they are generated. Specifically, EPA is proposing that all credits generated from engines rated under 19 kW be calculated against the proposed Tier 2 standards, even prior to the Tier 2 time frame. This will apply for both NMHC + NO_X credits and PM credits. In other words, prior to the date when the proposed Tier 2 standards become effective, manufacturers who want to generate credits can generate credits only against the proposed Tier 2 standards, not the proposed Tier 1 standards. EPA believes this strategy for generating emission credits from engines rated under 19 kW is appropriate because the majority of engines in that power category use indirect fuel injection designs, which tend to have significantly lower NO_X levels compared to direct injection engines and, in most cases, NMHC + NO_X levels significantly lower than the proposed Tier 1 standards. For engines rated between 19 and 37 kW, where direct injection engines are more common, EPA is proposing that all engines generate credits against the applicable proposed standards, but, as discussed below, EPA is requesting comment on whether credits for engines between 19 kW and 37 kW should be generated against the proposed Tier 2 standards even during the Tier 1 time frame.

Because engines rated under 37 kW are currently unregulated at the Federal level, EPA cannot base the Tier 1 FEL upper limits on the previously applicable standards. However, the California ARB currently regulates nonroad diesel engines rated under 19 kW. Based on existing California ARB standards for nonroad diesel engines rated under 19 kW, EPA is proposing Tier 1 FEL upper limits for engines rated under 37 kW of 16.0 g/kW-hr (12.0 g/hp-hr) for NMHC + NO_X and 1.2 g/kW-hr (0.9 g/hp-hr) for PM. The proposed FEL upper limits for the Tier 2 standards are the proposed Tier 1 standards.

With regard to credit life, EPA is proposing to adopt the unlimited life provisions for engines rated under 37 kW, as described earlier for engines rated over 37 kW, with one exception. Because of concerns over the amount of credits manufacturers could earn on indirect injection engines under the proposed Tier 1 standards and the potential for significant delay in implementation of the Tier 2 standards, EPA is proposing that all credits generated prior to the Tier 2 time frame on engines rated under 19 kW expire at the end of 2007. With respect to credit generation and usage calculations, EPA is proposing that manufacturers use the sales-weighted average power for engines rated under 37 kW, as described earlier for engines rated over 37 kW. The inclusion of useful life in the calculation of credits, as described earlier, will also apply to the proposed ABT program for engines rated under 37 kW.

With respect to trading across power categories, EPA is proposing two restrictions on such trading because of the concerns noted above regarding the relatively low emissions from indirect injection engines. First, EPA is proposing that manufacturers not be allowed to use credits generated on engines rated under 19 kW to demonstrate compliance for engines rated over 19 kW. Second, EPA is proposing to prohibit manufacturers from trading credits earned on indirect injection engines rated over 19 kW to other manufacturers. Under this second proposed restriction, a manufacturer would still be allowed to use such credits for averaging or banking purposes with other engines it produces rated over 19 kW. EPA believes these trading restrictions are important to alleviate concerns that indirect injection engines could generate significant NMHC + NO_X credits against the proposed standards, which could then be traded to other manufacturers to delay compliance in the higher power categories. As an alternative to the proposed prohibition on trading credits from indirect injection engines to other manufacturers, EPA requests comment on applying the same limitation on

credit generation for engines greater than or equal to 19 kW and less than 37 kW as are being proposed for engines below 19 kW. This alternative would require that all credits, including credits generated on Tier 1 engines, be generated against the proposed Tier 2 standards.

With respect to the exchange of credits across applications, EPA is proposing that manufacturers not be allowed to use credits generated on land-based engines to demonstrate compliance for marine engines. EPA believes that trading from land-based nonroad engines to marine engines is inappropriate for three reasons. First, allowing land-based credits to offset marine emissions could neutralize the marine program. There are many more land-based nonroad engines than there are marine engines, and allowing these trades would allow manufacturers to effectively trade out of the marine emission control requirements. Second, such a program would penalize small marinizers whose business consists of buying engines or engine blocks and modifying them for marine applications, or other manufacturers of only marine engines. These small marinizers would not have the same access to land-based credits as large engine manufacturers who also marinize their own engines. Allowing cross-application trading would give large manufacturers an unfair competitive advantage, since large manufacturers could effectively trade themselves out of the marine program whereas smaller marinizers would have to make the investments necessary to reduce emissions from their marine engines. Third, allowing land-based nonroad engine credits to offset marine emissions raises concerns regarding the geographic distribution of emission reductions. Specifically, the emissions from diesel marine engines are concentrated only in port areas while the emission from land-based nonroad are arguably spread out more evenly across the country. This creates a level of uncertainty as to whether the engines that generated the credits will be used in the same nonattainment area as the marine engines whose emissions are offset by the credits. While this problem is present to a certain degree in all nonroad programs, it is also the case that marine engines can be used in only one kind of area, and thus the ability to offset potentially higher marine emissions with lower-emitting land-based engines is limited.

While EPA is proposing not to allow manufacturers to use credits generated on land-based engines to demonstrate compliance for marine engines, EPA is proposing to allow manufacturers to use credits generated on marine engines to demonstrate compliance for land-based applications. This will benefit those engine manufacturers that only manufacture marine engines, who otherwise would be limited to trading emission credits among themselves or not trading at all. In addition, EPA expects to propose that small diesel marine engines be included in future diesel marine ABT program. This would create additional trading opportunities for these engine manufacturers.

Last of all, EPA is proposing a special four-year averaging and banking program for engines rated under 37 kW that would allow manufacturers to create a negative balance of credits for the first two years after the proposed Tier 1 standards are effective. This negative balance would have to be eliminated by the end of the fourth year of the Tier 1 standards. Based on discussions with engine manufacturers, it appears the proposed Tier 1 dates for engines rated under 37 kW will be challenging, especially for air-cooled direct injection engines. Even though a number of the small engine manufacturers have signed the Nonroad Statement of Principles that included the proposed Tier 1 standards, there may be some engine models that will not be ready by the proposed implementation dates. Therefore, EPA believes the two year allowance is important to ensure the feasibility of the proposed standards given the short lead time that is expected between the time the rule is expected to be finalized and the proposed implementation dates of the Tier 1 standards. Under the proposed program, manufacturers would be allowed to certify engines with FELs above the proposed Tier 1 standards and generate ''negative credits'' for the first two years after the proposed Tier 1 standards take effect. By the end of the fourth year after the proposed Tier 1 standards take effect, the manufacturer would be required to have certified enough engines with FELs below the proposed Tier 1 standards such that they have generated enough credits in order to pay back the negative credits, along with a ten percent penalty for any negative balance of credits carried over from one year to the next. Because of the penalty applied to negative credit balances, EPA believes the multi-year averaging and banking program will provide a small benefit to the environment in the long run. Under this special program, manufacturers would not be allowed to use emission credits obtained through trading with other engine manufacturers to offset their negative credit balances. In accordance with the above described provisions, separate programs would apply for engines rated under 19 kW and for engines between 19 and 37 kW.

As noted earlier, EPA solicits comments on all aspects of the proposed ABT changes, including comments on the benefit of these changes to manufacturers in meeting the proposed emission standards and any potential air quality impacts which might be associated with them.

E. Flexibility for Equipment Manufacturers

1. Overview of Approach to Providing Flexibility

EPA has often set engine emission standards that take full effect at a set point in time, concurrently precluding the installation of engines not certified to the new standards in vehicles or equipment. In meeting with manufacturers of nonroad engines and equipment to develop the Statement of Principles, EPA determined that a different approach to implementing new standards might be needed to avoid unnecessary hardship for equipment manufacturers (sometimes referred to as original equipment manufacturers or OEMs), while achieving the desired environmental benefits.

Some equipment manufacturers that do not make their own engines have complained that the Tier 1 rule resulted in disruptions because their engine suppliers did not always provide adequate lead time for the equipment redesigns needed to accommodate engine design changes such as mounting locations and heat rejection loads. The averaging, banking, and trading program is of little help to them, because they, as equipment manufacturers, have no control over which engines earn or use credits. For some, even timely information on the new engine designs has not solved the problem because of the sheer volume of redesign work needed to change diverse product offerings with limited engineering staffs. The manufacturers expressed a belief that the same problem would accompany the transition to the proposed Tier 2 standards. By addressing this problem in the design of the Nonroad Statement of Principles, the signatories were able to consider more stringent standards earlier than would otherwise be feasible.

In response to these concerns, the Agency is proposing an OEM transition program to provide equipment manufacturers with some control of the transition process to new standards. This proposed program is based on the provisions contained in the

Supplemental ANPRM, with modifications suggested in written comments, in subsequent discussions with equipment manufacturers, and in the report of the panel convened for this rule under the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA).[31] The program consists of six major elements, each directed at a specific need. Although they involve certain planning and recordkeeping responsibilities if taken advantage of, all of these elements are voluntary. An OEM has the option to continue to do business as under the current regulations, subject to the prohibited acts provisions of 40 CFR Part 89, Subpart K. The elements of the program are: (1) A percent-of-production allowance for general applications, (2) a larger percent-of-production allowance for agricultural equipment, (3) a small-volume allowance, (4) continuance of the Tier 1 allowance to use up existing inventories of engines, (5) access to averaging, banking, and trading program credits, and (6) availability of hardship relief. Each of these is discussed in detail below.

2. Elements of Proposed OEM Transition Program

a. Percent-of-Production Allowance for General Applications: This proposed element allows each equipment manufacturer to install engines not certified to new emission standards in a certain percentage of its annual production for the U.S. market. For equipment with engines over 37 kW, in each year that a new Tier 2 standard first applies, an OEM will be allowed up to 15 percent of its equipment produced for sale or use in the U.S. to contain engines certified to Tier 1 standards. This allowance drops to 5 percent in each of the next 6 years. These allowances can provide substantial relief by allowing an OEM to prioritize redesign work onto high volume models. Many manufacturers have a substantial number of lower volume models with combined sales within these percentages. The several years in which exemptions are allowed accounts for the very limited engineering staffs available in many companies for the needed redesign work. EPA believes that allowing this latitude in the initial years of the standards is consistent with the Clean Air Act and that, were it not available, many OEMs would likely be unable to meet the redesign requirements necessitated by the standards. This flexibility allows the vast majority of the equipment population to be in compliance with these stringent standards more quickly than would otherwise be possible.

As presented in the Supplemental ANPRM, this provision would apply to equipment with engines under 37 kW as well, except that the 5 percent allowance would extend for 3 years instead of 6, and the exempted equipment could use uncontrolled engines beginning in the Tier 1 time frame. Manufacturers of equipment with engines rated under 37 kW objected to the shorter flexibility program duration proposed for their equipment. They argued that the 1999 and 2000 Tier 1 implementation dates that apply to them make it even more imperative that they receive flexibility allowances at least as large as those applied to manufacturers of large equipment. This concept was also put forward for consideration by the Small Business Advocacy Review Panel as potentially beneficial in addressing small business concerns. EPA believes that this concern has merit and also believes that the effect of such an extension on the environmental benefit would be small. Therefore the Agency is proposing, as a regulatory alternative, that the provisions of the general percent-of-production allowance that apply to manufacturers of large equipment be applied to manufacturers of equipment using small engines as well. Comment is requested on which of these regulatory alternatives is preferred. This alternative would also apply to the special agricultural equipment allowance and the small volume allowance (both discussed below) as well, so that no distinction would be made between equipment above and below 37 kW.

Commenters on the Supplemental ANPRM also requested a somewhat modified proposal from that outlined above. Under this modified approach, OEMs could respread the fixed percentage allowances across the years covered by the program. For example, instead of 15 percent of its production in the first year and 5 percent in each of the next 6 years, an OEM could exempt 45 percent in the first year and none thereafter, or save and spread its exemptions at 15 percent in each of years five, six, and seven to accommodate Tier 3 product introductions. EPA expects that this approach would not result in a significant degradation of the environmental benefit, due to the low percentages involved after the first year in the fixed percentage approach and the likelihood that some OEMs would group exemptions earlier and some later. The Agency believes that this added flexibility would provide substantial benefit to the industry by allowing each OEM to make its own determinations regarding which equipment is most in need of the flexibility provisions. EPA is therefore proposing it as a regulatory alternative to the fixed-percentage proposal. This concept was also put forward for consideration by the Small Business Advocacy Review Panel as potentially beneficial in addressing small business concerns (see Section VIII.B.).

To simplify the program, EPA proposes that the allowance under this alternative be framed as a 45 percent cumulative allowance over seven years (30 percent over 4 years for engines rated under 37 kW if the shorter duration alternative for these engines is adopted). The percent of production of exempted equipment in the first year would be subtracted from this starting allowance to determine the remaining allowance, and so on. EPA requests comment on the percent-of-production allowance and on which regulatory alternative is preferred.

Because actual production figures are not available when product planning decisions must be made, OEM's will have to base these decisions on projected production volumes. As a result, EPA will expect manufacturers to factor actual production data into annual redeterminations of remaining allowances and to adjust their product plans accordingly, so that all compliance determinations are ultimately based on actual production.

Another modification suggested by commenters is a provision to allow transfer of exemptions between power categories, with appropriate weightings to account for the differing environmental impacts of different engines. The Agency believes that this flexibility could provide substantial implementation benefits to some manufacturers, but is concerned that substantial losses in environmental benefits could result unless conservative correction factors could be devised. Many parameters affect an engine's impact on the environment, including size, life expectancy, average load factors, annual usage, and location of use, making the determination of correction factors extremely difficult. Of even more concern is the possible abuse of transferred exemptions to disadvantage a smaller competitor. A large manufacturer with a diverse product offering could stack exemptions into a market niche it competes in, possibly allowing it to sell machines with cheaper noncomplying engines for many years. EPA requests comment on

[31] ''Final Report of the SBREFA Small Business Advocacy Review Panel for Control of Emissions of Air Pollution from Nonroad Diesel Engines'', May 23, 1997 (available in Air Docket A–96–40).

the transfer of exemptions, including possible ways of addressing these concerns. EPA is especially interested in comments on the possible allowance of exemption transfers limited to the two power categories under 19 kW in Tier 1, because of the special challenges involved in designing these small engines to control emissions by the implementation date, and the relatively narrow power range for these two categories, which may somewhat ease concerns about proper weighting and exemption stacking.

b. Percent-of-Production Allowance for Agricultural Equipment: In preparing the proposal, EPA was made aware of some special concerns in the implementation of new emission controls on agricultural equipment. First, because the prices of farm products are strongly influenced by economic factors other than the cost of production, individual farmers are often not able to pass cost increases for new machinery on to consumers. Second, although many agricultural operations are quite large, there remains a sizeable segment of this equipment user community for which the rapid introduction of new technologies may be problematic. This segment is characterized (to varying degrees) by: (1) Small operations, often limited to family members, (2) remoteness from dealer or factory repair facilities, (3) traditional reliance on user maintenance, and (4) reticence to buy machines with unfamiliar technologies such as electronic controls. Third, there are numerous agricultural equipment models that service niche applications, for which only a handful of machines are sold each year. Fourth, although the international harmonization of standards is one of the goals of this program, farm tractors have not yet been included in the proposed regulations in the EU, and so control of emissions from these machines in Europe may therefore lag that of other applications. Finally, there are special challenges in redesigning some agricultural equipment for modified engine designs, such as the potential for heat exchanger plugging by airborne crop debris and the need for tractor hood profiles that allow a clear view of crop rows. Although certain of these or similar issues may apply individually to other equipment market segments as well as the agricultural market, they combine in the agricultural segment to warrant particular concern about a rapid transition to new standards.

After considering these issues, the Agency is proposing to grant more lead time for this equipment through a somewhat expanded OEM transition provision. Specifically, in each year that a new Tier 2 standard (Tier 1 for engines rated under 37 kW) applies, an OEM will be allowed up to 30 percent of its farm equipment produced for sale or use in the U.S. to contain engines certified to Tier 1 standards (uncertified for engines rated under 37 kW). This allowance drops to 15 percent in each of the next seven years (3 years for engines rated under 37 kW if the shorter duration alternative for these engines is adopted). A company that makes some farm equipment and some equipment used in other applications, wishing to take advantage of both the general and the special allowances, would make separate percent-of-production determinations in each category. EPA is also proposing that the provisions discussed above for exemption spreading apply to this special allowance as well. This would in effect provide a 135 percent cumulative allowance over eight years (75 percent over 4 years for engines rated under 37 kW if the shorter duration alternative for these engines is adopted).

EPA is aware that some ambiguity exists in the term ''farm'' equipment. The Agency desires that this expanded allowance be reserved for equipment models that are clearly targeted for the agricultural markets, but also recognizes that machines are sometimes put to diverse uses. EPA believes that the current definition for ''farm equipment or vehicle'' in 40 CFR 85.1602 is adequate for the purposes of this program. This definition covers equipment primarily used in commercial farm and logging activities. No routine record keeping or other evidence would be required of OEMs to make such an a priori determination. However, should EPA gather clear evidence of a misapplication of this designation, a recalculation of exemptions under the general application allowance would be required. Comment on this approach and alternative suggestions are solicited.

It should be noted that, although this provision may have some negative air quality implications, the impact of this expanded allowance on air quality is mitigated somewhat by the typical locations of this type of equipment. Much of this equipment is used in rural areas of the country that are remote from urban nonattainment areas. This is perhaps especially true of the small volume applications most likely to be exempted in the transition program. Although the regional transport of emitted pollutants over large distances is of concern, as explained in Section II, it is reasonable to expect some falloff of airborne concentrations of these pollutants over these distances.

Commenters on the Supplemental ANPRM suggested that companies that make both agricultural equipment and other equipment be allowed to transfer exemptions between these broad categories to further enhance implementation flexibility. Though supporting the goal of increased flexibility, EPA is concerned that substantial transfers of the large special exemption allowance could slow the introduction of complying construction, industrial, and utility machines, which is not justified by the analysis above. The Agency is also concerned that this added flexibility could provide an unfair competitive advantage to large companies with diverse product lines, a concern reflected in the comments as well. These concerns could be addressed by discounting transferred exemptions to reflect environmental or business impact differentials. However, at this time, EPA has no basis by which to determine the appropriate discount levels and so is not proposing this flexibility. Other commenters requested that the special allowance provision be dropped entirely and the resulting exemption pool be respread into the general allowance. However, the Agency believes that this would not address the above-discussed concerns. EPA requests comment on the special allowance proposal and on the suggestions made in the Supplemental ANPRM comments.

c. Small Volume Allowance: The percent-of-production approach outlined above may provide little benefit to small businesses focused on a small number of equipment models. To respond to these concerns, EPA is proposing that equipment manufacturers be allowed to exceed the percent-of-production allowances described above during the same years affected by the allowance program for general applications, provided they limit the installation of Tier 1 engines (uncertified engines for ratings under 37 kW) in each power category to a single equipment model with an annual production level (for U.S. sales) of 100 pieces or less. Though intended to ensure that the flexibility program does not disadvantage small businesses, this provision would be available to all equipment manufacturers. A manufacturer's use of this provision would not affect the availability of the other elements of the OEM transition program, although it would not be additive to the percent-of-production allowances: an OEM could base its exemption count on the percent-of-production allowance or the small

volume allowance in any power category in any year.

EPA proposes that the exemption spreading provisions for the percent-of-production allowances discussed above, if adopted for these allowances, apply to the small volume allowance as well. That is, a manufacturer of a piece of equipment with an engine rated over 37 kW may use Tier 1 engines in a total of 700 of these units produced over the first seven years after the Tier 2 standard takes effect. Similarly, a manufacturer of a piece of equipment with an engine rated under 37 kW may use uncontrolled engines in a total of 400 of these units produced over the first four years after the Tier 1 standard takes effect, if the shorter duration allowance alternative is adopted for these engines.

EPA is aware of two concerns that must be addressed with this program element. First, a manufacturer may need to curtail sales of a product that, though initially selling below 100 units annually, experiences unanticipated sales growth marginally beyond this level; there would be no time to redesign the product for the new tier of standards. The Agency believes that the flexibility provided by the exemption spreading measure discussed above would sufficiently address this concern. A manufacturer with better than expected sales orders for the exempted model would use up the total exemption allowance earlier than expected, but, except in the last year that exemptions are available when conservative planning may be called for, an annual adjustment of the following year's exemptions would cover any reasonable underestimate of sales.

The second concern regards the vagueness of the term ''model.'' Some OEMs may wish to take greater advantage of the small volume allowance by grouping several small volume products under a single model designation, possibly using ''submodel'' designations to distinguish products. One method of addressing this would be to adopt a regulatory definition of the term ''model'' for the purposes of this program, such as requiring that products cannot be considered to be of the same model designation unless they have exactly the same model number, with no distinguishing lower level designations.

Another approach would be to simplify the program by not requiring that the small volume exemption be limited to a single model. This has the advantage of providing more flexibility to the OEMs by allowing any number of models to be exempted, provided the combined annual exemptions from all of these models does not exceed the allowed maximum in any one power category. Some manufacturers have advocated this approach. However, it has the disadvantages of increasing the number of exemptions likely to be taken (thus possibly foregoing some environmental benefit), and of moving away from the intent of the small volume allowance, which is to help small OEMs with very limited product offerings. EPA believes that these disadvantages are not serious, and so is proposing this approach as an alternative to the single model requirement. This concept was also put forward for consideration by the Small Business Advocacy Review Panel as potentially beneficial in addressing small business concerns. EPA requests comment on the small volume allowance and on which of the proposed regulatory alternatives is preferred.

d. Continuance of the Existing Inventory Allowance: Paragraph (b)(4) of 40 CFR 89.1003 states in part: ''Nonroad vehicles and equipment manufacturers may continue to use uncertified nonroad engines built prior to the effective date until uncertified engine inventories are depleted; however, stockpiling of uncertified nonroad engines will be considered a violation of this section.'' EPA proposes to extend this provision to the Tier 1-to-Tier 2 and Tier 2-to-Tier 3 transitions as well. A machine using such an engine would be considered under the tier of emission standards to which the engine is subject, and would therefore be treated as though it were produced in the previous year for such purposes as calculating percent-of-production and small volume allowances. It should also be noted that engines for which a manufacturer uses averaging, banking, and trading program credits to demonstrate compliance with EPA requirements will be treated in the OEM transition program as though they fully meet the applicable emission standards.

e. Access to Averaging, Banking, and Trading Program Credits: Though not discussed in the Supplemental ANPRM, commenters suggested that OEMs be provided additional flexibility by allowing them to purchase credits generated by engine manufacturers in the nonroad averaging, banking, and trading program. These credits would then be retired in exchange for further allowances to build equipment containing noncomplying engines. Although no guarantee could be made that credits would be available at a reasonable price, this provision would provide one more alternative in a range of options for OEMs to consider in planning for the new engines. This concept was also put forward for consideration by the Small Business Advocacy Review Panel as potentially beneficial in addressing small business concerns.

The Agency is favorable to concepts such as this that provide flexibility while tending to preserve the environmental benefit of the program, and so is proposing this additional flexibility. EPA believes this concept may actually benefit the environment by providing an incentive for engine manufacturers to pull ahead clean technologies in order to sell their credits at a profit. However, the Agency requests comment on whether there may be, on the other hand, the potential for a loss in environmental benefit through the creation of a market for credits that would otherwise have gone unused, and on the advisability of discounting credits used by OEMs to mitigate such losses. Comment is also sought on the advisability of restricting this provision to those applying for hardship relief, as discussed below.

The Agency is also soliciting comment on means of structuring the program to minimize its complexity and to preclude double-counting of credits. EPA is proposing that the credit amounts needed for each additional allowance be simply determined by multiplying the difference between the applicable standards times the midpoint of the applicable power range. For example, an allowance for a machine using a 200 kW (268 hp) Tier 1 engine in the Tier 2 time frame would require NMHC + NO_X credits totaling:

$$(1.3 + 9.2 - 6.6)\ \text{g/kW-hr} \times 177.5\ \text{kW} \times 8{,}000\ \text{hr} = 5.538\ \text{Mg},$$

because 1.3, 9.2, and 6.6 g/kW-hr (1.0, 6.9, and 4.9 g/hp-hr) are the Tier 1 hydrocarbon, Tier 1 NO_X, and Tier 2 NMHC + NO_X standards, respectively; 177.5 kW (237.9 hp) is the midpoint of the 130 to 225 kW range, and 8,000 hours is the useful life for this range. For the sake of simplification, EPA would assume that Tier 1 hydrocarbon standards equate to NMHC levels, and that the 1.3 g/kW-hr (1.0 g/hp-hr) hydrocarbon level applies to Tier 1 power categories below 130 kW, for which there are no Tier 1 hydrocarbon standards. For OEMs seeking to use credits for additional allowances to install uncontrolled engines rated under 37 kW during Tier 1, EPA is proposing that the credit calculation assume uncontrolled NMHC + NO_X and PM levels of 16.0 and 1.2 g/kW-hr (11.9 and 0.9 g/hp-hr), respectively, based on a review of test data generated in the California small engine program.

Finally, the Agency is proposing that OEMs wishing to use ABT program credits would submit the same type of annual reports currently required of engine manufacturers participating in the ABT program, to allow the Agency to adequately track credits. Other credit use requirements and restrictions of the ABT program that apply to engine manufacturers would apply to equipment manufacturers as well.

f. Hardship Relief Provision: Commenters requested adoption of a hardship appeal process by which an OEM, especially a small business, could obtain relief by providing evidence that, despite its best efforts, it cannot meet the implementation dates, even with the OEM transition program provisions outlined above. Such a situation might occur if an engine supplier without a major business interest in the OEM were to change or drop an engine model very late in the implementation process. This concept was also put forward for consideration by the Small Business Advocacy Review Panel as potentially beneficial in addressing small business concerns. Based on outreach the Agency has done in formulating this proposal, especially to the small OEM community, EPA agrees that the concern of small businesses about the uncertainty of timely supply may be valid, and seeks to mitigate the possibility of business failures by providing fair, objective criteria for hardship appeal that minimize the potential loss in environmental benefit, minimize the Agency's involvement in a business' financial affairs, and avoid straining Agency resources.

The Agency is proposing a hardship relief provision under which appeals must be made in writing, be submitted before the earliest date of noncompliance, be limited to firms that fit the small business criteria established by the Small Business Administration ,[32] include evidence that failure to comply was not the fault of the OEM (such as a supply contract broken by the engine supplier), and include evidence that the inability to sell the subject equipment will have a major impact on the company's solvency. The Agency would work with the applicant to ensure that all other remedies available under the flexibility provisions are exhausted before granting additional relief, and would limit the period of relief to no more than one year. Furthermore, the Agency proposes that applications for hardship relief only be accepted during the first year after the effective date of an applicable new emission standard. Comment is solicited on all aspects of this proposal and on whether the Agency should require those who receive relief to recover some of the lost environmental benefit, such as by purchasing Blue Sky Series engines described elsewhere in this proposal.

[32] 750 employees for manufacturers of construction equipment and industrial trucks, 500 employees for manufacturers of other nonroad equipment.

3. Availability of Engines

EPA is proposing that engine manufacturers be allowed to continue to build and sell the engines needed to meet the market demand created by the OEM transition program described above. Commenters on the Supplemental ANPRM expressed concern that the program will have minimal value because engine suppliers may decide not to continue making the older generation engines. Based on observation of current practice in which older engine configurations are routinely built to support replacement engine needs, EPA believes that engines will be made available to make the transition program workable. Further comment is solicited on this issue. Concerns that integrated manufacturers (who build engines for installation in their own OEM products and for sale to competitors) may purposely manipulate the production or prices of these engines to disadvantage their competitors appear to the Agency to be without merit, as this opportunity exists apart from EPA programs. However, to provide additional assurances, the engine manufacturers that signed the Nonroad Statement of Principles have agreed that, if they decide to continue the production of such engines, they will make them available for sale at reasonable prices to all interested buyers. EPA does not believe that regulation codifying this commitment is necessary or appropriate.

EPA is proposing that equipment manufacturers procuring engines for use under the OEM transition program provide written assurance to the supplying engine manufacturer that such engines are being procured for this purpose. EPA requests comment on the need for a requirement that engine manufacturers maintain or annually provide records on the engines manufactured in support of the OEM transition program, in order to help EPA prevent abuse of the program.

4. Enforcement and Record Keeping Requirements

The Agency desires to minimize the administrative burden to all parties involved with the OEM transition program. OEMs choosing not to take advantage of the allowances would have no requirements beyond those already in place from the Tier 1 rule. For OEMs choosing to take advantage of the allowances, EPA believes that the following requirements will be sufficient to allow it to enforce the program. (1) OEMs must keep records of the production of all pieces of equipment with engines covered by this rule. These records must be kept until December 31 of the year after the last year in which any of the allowances are used by the company. (2) Such records must include serial and model numbers and dates of production of equipment and installed engines, rated power of each engine, and the calculations used to determine the percent of production allowances taken in each power category. (3) OEMs must make these records available to the Agency upon request.

The Agency intends to conduct only limited audits of these records, and expects that scrutiny by the OEMs of their competitors' products will help identify potential candidates for audits. However, to further aid this process and the early identification of affected OEMs who may not be aware of the program requirements, EPA is considering also requiring that each OEM submit a letter to the Agency after each year in which allowances are utilized, providing some summary information, such as the number of machines sold with and without engines certified to the new standards. Comment is requested on the appropriateness of such a requirement.

EPA is aware of two conflicting concerns about the OEM transition program expressed by equipment manufacturers. On the one hand, manufacturers seek the maximum control and flexibility possible in implementing new standards. On the other hand, some manufacturers have felt that the flexibility provisions contained in the Supplemental ANPRM are already too complicated and that the suggested enhancements make them more so. Unfortunately, the simpler approaches suggested to date have involved a substantial loss in environmental benefits, amounting to effectively delaying the standards. Therefore the Agency has chosen to propose the collection of voluntary provisions discussed above, recognizing that effort will be needed by both the Agency and the industry to help manufacturers make best use of their options.

5. Alternative Concepts

Commenters on the Supplemental ANPRM suggested an alternative approach for helping OEMs implement

the new standards, by which a period of one to three years would be provided between availability of complying engines and the required date for use of these engines in new equipment. EPA is not proposing this approach because it would require a regulatory enforcement mechanism to ensure that final production-ready prototype engines are available long before the start of engine production on the required implementation date for new standards. Without such a mechanism, engine manufacturers could continue making design changes, delaying the implementation of new standards indefinitely. EPA is unaware of any such mechanism that would not also cause major disruptions in the industry.

Others recommended that the Agency set standards on a cost-effectiveness basis, application by application. Regulations would only apply to engines in those applications with an overall environmental impact high enough, and a cost of compliance low enough, to satisfy some specified cost-effectiveness threshold. The Agency is not proposing this approach for several reasons. First, this approach, which makes cost-effectiveness the primary factor in determining applicable standards, appears to be at odds with the standard setting criteria of section 213 of the Clean Air Act, which is primarily technology-based, with added consideration of cost, noise, energy, and safety factors. Second, accurate determinations of application-specific cost-effectiveness would be extremely difficult to make. Applications would constantly move above and below the threshold as new information and new design innovations are brought forth, creating uncertainty in the industry. Third, many engine models are used in multiple applications, possibly leading to multiple versions and higher costs. Fourth, evaluation outcomes would depend arbitrarily on how applications are defined. Many niche markets may have environmental impacts that are low individually, but quite large in the aggregate. Fifth, setting the threshold for cost-effectiveness would have inherent problems of arbitrariness, and would likely be met with vastly differing views in the public regarding the appropriateness of any threshold. Finally, the exempted equipment would still have some air quality impact, resulting in either a lower benefit of the program or more stringent standards for the regulated engines.

F. Flexibility for Post-Manufacture Marinizers

EPA believes that post-manufacture marinizers affected by the proposed standards may need some additional flexibility, beyond that available in the ABT program, to meet the challenges of new standards. By EPA's definition, a post-manufacture marinizer is someone who produces marine diesel engines by substantially modifying a complete or partially complete diesel engine, and who is not controlled by the manufacturer of the base engines or by an entity that controls both of them. For the purpose of this definition, ''substantially modify'' means changing an engine in a way that could change engine emission characteristics.

In some ways the challenge of any new standards for these marinizers would mirror that of nonroad equipment manufacturers, in that changes made by the original engine manufacturers might require changes in the parts and process involved in marinization. Because marinizers would experience similar impacts from the proposed standards as equipment manufacturers, EPA is requesting comment on extending some or all of the equipment manufacturer flexibility provisions described in Section III.E. to post-manufacture marinizers affected by this proposal. EPA sees the hardship relief provision for small businesses as perhaps especially appropriate for the post-manufacture marinizers, many of which are small businesses, and so is proposing their inclusion under this provision.

Unlike equipment manufacturers, however, marinizers generally complete the final stages of engine production and thus would typically be responsible for obtaining an EPA Certificate of Conformity with standards, and would bear liability for the emissions of these engines in use. One marinizer stated in EPA's outreach effort to small businesses (see Section VIII.B.) that the impact on small marinizers could be reduced if the proposed regulations allowed a post-manufacture marinizer to rely on the original engine maker's certificate of conformity, provided that the marinizer also demonstrates that it has not altered the engine's performance or combustion parameters. EPA is interested in pursuing certification streamlining options for marinizers, but has concerns that the original engine manufacturers may challenge their presumed liability in EPA enforcement actions directed at these engines. Also, a simple demonstration of equivalent emissions performance on pre- and post-marinized engines would not be sufficient to address the Agency's primary concern, which is the possibility of degradation of in-use emissions performance over time. EPA solicits suggestions on how the post-manufacture marinizer certification process might be streamlined while providing assurance of ongoing responsibility and durable emissions control design.

G. Control of Crankcase Emissions

Crankcase emissions are those exhaust gases that, upon leaving the combustion chamber, do not pass through the exhaust valve. Instead, the gases discharge (blowby) into the crankcase via the clearance between the piston and the cylinder wall. On certain engines (those engines with open crankcases), these gases may eventually escape from the crankcase to the atmosphere and are therefore named crankcase emissions. Some manufacturers produce engines that route crankcase vapors to the air intake system of the equipment; such a design is called a closed crankcase. This method, also called positive crankcase ventilation, recirculates blowby gases through a valve back to the intake manifold to be burned in the combustion chamber.[33]

Since 1985, closed crankcases have been required in naturally aspirated (nonturbocharged) highway diesel engines (45 FR 4136, January 21, 1980). Currently, turbocharged highway diesel engines are not required to have crankcase emission controls due to special difficulties in designing for closed crankcase. The problem with recirculating blowby gases in turbocharged engines is that the durability and effectiveness of turbocharger and aftercooler components can be affected by recycling gases containing particulate matter and corrosive gases.

There is limited data on crankcase emissions from nonroad diesel engines. In fact, EPA is not aware of any studies that explicitly investigate crankcase emissions from nonroad diesel engines. There are, however, studies relating to highway crankcase emissions.[34] Crankcase emission data from a 1977 study, in which three diesel engines (two naturally aspirated engines and one turbocharged engine) were tested. HC crankcase emissions ranged from 0.007 to 0.017 g/kW-hr (0.005 to 0.013 g/hp-hr), which represents 0.2 to 4.1 percent of corresponding exhaust emissions. PM crankcase emissions ranged from 0.9 to 2.9 percent of corresponding exhaust emissions. NO_X crankcase emissions represented only 0.01 to 0.1 percent of corresponding

[33] U.S. Environmental Protection Agency, Office of Mobile Sources, NEVES, Appendix I, Chapter 4, November 1991 (available in Air Docket A–96–40).

[34] ibid.

exhaust emissions. A more recent study performed by Southwest Research Institute in 1993 provided similar crankcase emissions from one turbocharged heavy-duty diesel engine, with HC, PM, and NO_X all at 0.01 g/kW-hr (0.01 g/hp-hr). None of the reported highway engines had more than 500,000 miles of use, an important consideration because of the expected increase in blowby gases as engines experience wear.[35]

EPA proposes to extend the closed crankcase requirement to nonroad engines, including the exemption for turbocharged diesel engines. Many naturally aspirated nonroad engines are already equipped with this technology; for those nonroad engine models still manufactured with open crankcases, EPA expects that closed-crankcase technology will be readily transferable. EPA has included the cost of closing crankcases in the analysis of the costs of complying with the proposed standards.

The proposed closed crankcase requirement applies to engines rated over 37 kW concurrent with the Tier 2 standards. Manufacturers of nonroad diesel engines rated under 37 kW are likely to have serious difficulties fully complying with closed crankcase provisions on the schedule proposed for Tier 1 emission standards, since this requirement would first apply to these manufacturers starting in 1999. Thus, for nonroad diesel engines rated under 37 kW, EPA proposes to delay the requirement for closed crankcases until 2001, providing more lead time for manufacturers of these engines. This delay will not have a major environmental impact because it is short, directed at a small segment of the engine market, and confined to a minor emission source relative to exhaust emissions. EPA requests comment on the proposal to control crankcase emissions and on the appropriateness of delaying the requirement for closed crankcases for these small engines.

H. Control of Smoke

1. Proposed Numerical Standards and Procedures

In 1994, EPA finalized smoke standards for nonroad diesel engines rated over 37 kW. The specified measurement method and calculations are from 40 CFR 86, subpart I, which was developed for highway engines. EPA concluded that the highway smoke test procedure would adequately test non-road engines and thus control smoke. The standards for nonroad engines are for engine smoke not to exceed averaged values of 20 percent on acceleration mode or 15 percent on lug mode and not to exceed peak opacity levels of 50 percent on either the acceleration or lug mode. EPA is proposing no changes to the smoke emission standards and procedures currently in place.

EPA proposes to extend the smoke standards to multiple-cylinder diesel engines rated under 37 kW, bringing these engines under the same regulatory framework as the larger engines. While these new standards may lead to lower smoke levels from some engines, the principal intent of setting standards is to prevent increased levels of smoke as engines are redesigned to comply with Tier 2 and Tier 3 standards for gaseous and particulate emissions. The same numerical standards would apply to the small engines. With minor exceptions, the same procedure, equipment, and calculation methods would also be used for these engines.

Extending smoke standards to the smaller engines raises some important issues. First, two-cylinder engines operating on the specified test procedure may produce puffs of smoke that may make the smoke measurement erratic. EPA proposes to permit the option of testing these engines with a preconditioned muffler of the type used in the field. Such an engine configuration is the same as that found in use, and thus represents meaningful control of in-use smoke; however, the smoke measurement response may be flattened out somewhat, resulting in potentially reduced levels of measured smoke. Engines with more than two cylinders will continue to be tested without a muffler, which is a ''worst case'' condition.

Second, specifying the correct exhaust pipe diameter requires extrapolation of specifications found in 40 CFR 86, subpart I. The current procedure calls for a 2 inch (5 cm) inside diameter exhaust pipe for testing engines rated under 101 horsepower maximum (75 kW). Yet, for constant visibility as a function of measured opacity (which is, in turn, a function of pipe diameter), this test pipe diameter should be smaller for engines with lower rated power. The same is true for the larger engines, where the procedure specifies the use of a 5 inch (13 cm) inside diameter exhaust pipe for the testing engines with a maximum rated power of 301 hp (225 kW) or greater. Consequently, the Agency is proposing that engines rated between 50 and 100 horsepower (37 and 75 kW) be tested with a 2 inch (5 cm) inside diameter exhaust pipe, while engines rated under 50 horsepower (37 kW) should be tested with an exhaust pipe of 1.5 inches (3.8 cm). Engines rated between 100 and 200 horsepower (75 and 150 kW) should be tested with the established 3 inch (7.6 cm) pipe diameter. Similarly, engines rated between 200 and 300 horsepower (150 and 220 kW) should be tested with the established 4 inch (10.2 cm) pipe diameter. For engines rated between 300 and 500 hp (225 and 373 kW), testing should be performed with the 5 inch (13 cm) inside diameter exhaust pipe, while engines rated over 500 horsepower (373 kW) should be tested with an exhaust pipe of 6 inches (15.2 cm). Perspectives and data on all issues related to testing these engines for smoke are solicited.

In applying the smoke standards and procedures to engines rated under 37 kW, EPA proposes to exempt one-cylinder engines. EPA believes that operation and testing of these engines is unique in ways that would need to be addressed before applying smoke standards. For example, it is not known if the smoke puffs emitted after each combustion stroke can be accommodated by the test procedure and if so, what the procedure features should be. The same is true of the dynamometer control specification elements of the procedure. Also, since there is no certainty as to the appropriate test procedure, there is no basis for selecting numerical standards. EPA is therefore proposing to postpone the regulation of smoke from these one-cylinder engines until a later rulemaking. The Agency believes there will be minimal air quality impact in the interim, since the large majority of one-cylinder diesel engines are used in generator sets and other steady-state applications; these engines therefore rarely experience acceleration modes, which are the the principal focus of smoke standards. EPA requests comment on the appropriate treatment of smoke requirements for one-cylinder engines.

In addition, EPA proposes to omit the smoke requirements for propulsion marine diesel engines rated under 37 kW. Manufacturers of these engines have stated that this is reasonable for at least the following two reasons. First, they state that smoke is not a problem with propulsion marine diesel engines. Most marine engine manufacturers already supply reduced-smoke engines because consumers demand low smoke levels for their own personal comfort. Second, they state that there is no reliable smoke test for propulsion marine engines, as the smoke test designed for land-based nonroad engines does not exercise the engine

[35] ''Draft Regulatory Impact Analysis: Control of Emissions of Air Pollution from Highway Heavy-Duty Engines,'' U.S. EPA, June 6, 1996 (Docket A–95–27).

over the typical marine engine operating cycle, which is governed by the propeller. EPA solicits comments on this issue.

2. Consideration of ISO Procedure

Since promulgation of the Tier 1 rule, an International Standards Organization committee (ISO TC70/SC8/WG1) has been developing a smoke test procedure specifically for nonroad engines. The EPA and regulated industry recognize the value of harmonized test procedures and standards limits. The Statement of Principles therefore states:

> The Signatories support the completion and worldwide adoption of the new smoke test being developed by the International Standards Organization (ISO 8178–9). EPA intends to propose to replace its current smoke test with the ISO test procedure for the sake of harmonization and improved control of smoke, provided that it provides for a level of smoke control at least as adequate as the current test.

However, this ISO procedure has not been finalized and thus it is not being proposed in this rulemaking. In anticipation of EPA's eventual consideration of the ISO 8178–9 test procedure, the Agency welcomes comments (including test data) addressing issues related to this procedure.

The draft ISO 8178–9 test procedure has several important features that distinguish it from the smoke test procedure developed for highway engines. First, the duty cycle over which the engine is to be operated is very similar to the procedure for highway engines, except that it deletes the 200 rpm initial speed increase and first-shift feature of the engine duty cycle. These types of operation are seldom, if ever, found in nonroad equipment.

A second important difference is the use of a Bessel filter algorithm to compute the peak, acceleration, and lug data from the instantaneous smoke values given by the smoke meter. The Bessel algorithm specified in the ISO procedure emulates a low-pass second-order filter and uses iterative calculations to determine coefficients that are a function of the smoke meter's physical and electrical response times and the sampling rate. This Bessel filter method of calculating results contrasts with the method specified in 40 CFR 86 subpart I, which calls for simple mathematical averages of one-half second data. The ISO Bessel filter calculation procedure selects the highest calculated value for each reported mode (acceleration, lug and peak), using Bessel averaging times that are less than or equal to those of the highway-based test procedure. The ISO procedure will likely result in values that are greater than those generated from the same data by the averaging procedure specified in 40 CFR 86 subpart I. Information, addressing this question, including test data if possible, is solicited.

Another issue is the form used for expressing the level of the standards. The current form is units of opacity—20 percent acceleration, 15 percent lug, and 50 percent peak. Opacity measurements are, however, a function of the effective optical path length, which is determined by the exit diameter of the exhaust pipe upon which the smoke meter is mounted. The diameter of the exhaust pipe specified in the current procedure is a function of engine power, as described above. However, this creates a step-wise relationship in the level of stringency as a function of engine power, which, at a minimum, creates different levels of stringency for engines close to the horsepower cut points. One solution is to express the measurements in units of light absorption coefficient, k (inverse meters), which is the form that the ISO committee has stated is the most technically correct. The numerical level of the standards would be expressed in terms such as the standard level, k, being a function (to some degree) of a parameter such as displacement, engine power, or other basic engine descriptor, and some constant. The EPA solicits data and comments on these issues.

3. In-Use Smoke Testing

Some state governments have expressed a desire for a smoke regulatory program that would enable them to test in-use nonroad engines in a manner that would permit action against gross emitters of smoke. The main elements of such a program would be a certification smoke requirement for new engines, EPA guidance for state in-use smoke control programs (including an in-use smoke test procedure and accompanying limit values), and a means by which the data from the two programs can be related. The current smoke test procedure from part 86, subpart I, does not provide data comparable to the most practical in-use smoke test procedure (a snap acceleration with measured opacity). Based on the current draft ISO 8178–9 certification smoke test procedure, EPA believes this test will provide the desired linkage. The Agency requests comment on the advisability of establishing such a smoke control program and on any interim steps that should be pursued while the ISO test is under development. Any such program would need to meet the requirements of section 209 of the Act regarding preemption of certain state programs.

I. Voluntary Low-Emitting Engine Program

a. Background

The Nonroad Statement of Principles includes a commitment to work towards a goal of achieving emission levels in the future that are even lower than those proposed in this notice. Specifically, the signatories agreed to strive to develop engines capable of controlling NO_X emissions to 2.0 g/kW-hr (1.5 g/hp-hr) and PM emissions to 0.07 g/kW-hr (0.05 g/hp-hr), while maintaining performance, reliability, durability, safety, efficiency, and compatibility with nonroad equipment.

Some technologies that will be pursued in the context of the research agreement have already undergone significant development. Officials representing certain cities, states, or regions in the U.S. have expressed interest in developing incentive programs to encourage the use of engines that go beyond federal emission standards. EPA also would like to encourage manufacturers to initiate demonstration projects to prove out these technologies in areas where there is a particular need for superior emission controls. EPA is therefore proposing a set of voluntary standards that may be used to earn a designation as a low-emitting engine. The program, if successful, will lead to the introduction and more widespread use of these low-emission technologies.

Ongoing research has led to much improved prospects for a variety of low-emitting diesel engine technologies. Some particulate traps are now designed for regeneration without an active control system, sometimes using fuel-based catalyst materials to reduce regeneration temperature requirements. Selective catalytic reduction, long used very effectively in stationary source applications, is now in several demonstration heavy-duty vehicles. Plasma and thermoelectric techniques are also under consideration for large particulate and NO_X reductions. EPA is very interested in seeing a demonstration of the emission-control potential for these engines in nonroad applications, especially related to the capability of maintaining low emission levels over extended field operation.

Alternative fuels also have the potential to reduce emissions from internal combustion engines. Alternative-fuel engines have made significant inroads into some segments of the nonroad market. Forklifts running on propane and generators fueled by

natural gas are the most visible examples of nonroad applications with established roles for alternative fuels. Table 3 includes data derived from the PSR PartsLink database for these and other applications in which equipment with alternative-fueled engines was sold in 1995. This information is approximate and does not reflect the use of battery-powered equipment or any engine retrofits for fuel conversion.

TABLE 3.—APPROXIMATE SALES OF ALTERNATIVE FUEL APPLICATIONS MARKETED IN 1995

Application	1995 Sales			
	Natural gas	LPG	Diesel	Gasoline
Forklift	0	43,000	12,000	17,000
Generator	4,500	1,500	53,000	13,000
Gas Compressor	2,400	0	0	0
Oil Field Equip.	370	0	1,300	15
Terminal Tractor	0	230	3,700	750
Scrubber/Sweeper	10	170	6,200	3,400
Irrigation Set	150	0	4,700	1,600
Refrigeration, A/C	90	0	48,000	0
Pump	40	0	10,000	6,600

In addition to these existing uses of alternative fuels, ground service equipment at airports provides a case study of the potential to increase reliance on alternative fuels in the nonroad arena. A concern for reducing emissions to improve local air quality and limit worker exposures has led some airlines to see alternative fuels as a cost-effective alternative for their existing diesel-fueled equipment. Greater use of alternative fuels at airports has been limited by the availability of engines. A challenge for the engine manufacturers is to develop a nonroad alternative fuel engine without needing to charge a large premium (to recoup R&D) that makes the engines unaffordable. EPA's intent in pursuing a program of voluntary standards for low-emitting engines is to help justify development of these nonroad engines.

EPA believes that nonroad equipment is in some cases much better suited to alternative fuels than are highway vehicles. Nonroad equipment, when operated within a well-defined local area, often has the advantage of central fueling. Also, several high-power engines running consistently over long periods can consume great amounts of fuel and generate correspondingly high emissions. Alternative fuels have the potential to lower operating costs (for example, from less expensive fuel and longer oil-change intervals) in addition to reducing emissions.

b. Proposal for Blue Sky Series Engines

EPA proposes to adopt voluntary emission standards that manufacturers could use to earn a designation of ''Blue Sky Series'' engines. The range of possible incentives to produce these engines are described below.

Central to the purpose of the voluntary standards is the need to demonstrate superior control of particulate emissions. Because of the sensitivity of particulate emissions to test cycles, as described in Section III.B., testing on a transient cycle is an important element of the proposed program for Blue Sky Series engines. EPA has begun work toward developing transient test cycles for nonroad equipment, but there is not yet any established or proven nonroad transient cycle. The highway test cycle, while not developed for nonroad engine operation, would result in a significant degree of control for nonroad equipment. EPA therefore proposes to specify the highway transient test cycle to evaluate emission levels relative to the voluntary standards. A commenter on the Supplemental ANPRM recommended that engine manufacturers have the option of selecting alternative test cycles applicable to specific engines or applications. EPA requests further comment on alternative test cycles. If EPA adopts a transient test for certifying nonroad engines in the future, the Agency will accordingly re-evaluate the test cycle and standards for Blue Sky Series engines.

Manufacturers could certify to one of three levels to demonstrate emission control that goes beyond the Tier 2 certification requirements, as described in Table 4. The percentage reductions would apply to all power categories. EPA requests comment on whether simplifying the program to include only one or two emission levels to qualify for the Blue Sky Series program would make it more effective. Engines would need to meet all the requirements established to demonstrate durability of emission controls, including allowable maintenance, warranty, useful life, rebuild, and deterioration factor provisions. Manufacturers would demonstrate compliance with the CO standard by comparing the emission levels generated on the highway test cycle with the numerical value of the CO standard for the applicable tier of nonroad engines for that model year. Manufacturers would also need to demonstrate compliance with applicable smoke standards.

TABLE 4.—PROPOSED STANDARDS AND DESIGNATIONS FOR BLUE SKY SERIES ENGINES

Designation	Percent reduction relative to Tier 2 standards	
	NMHC + NO_X	PM
Blue Sky Series—Class A*	35	35
Blue Sky Series—Class AA	50	50
Blue Sky Series—Class AAA	65	65

*The Class A option would no longer be available beginning any year that the Tier 2 standards apply to a particular power range.

EPA recognizes that among the candidate engines for the Blue Sky Series program are those low-emitting engines that have already been designed and certified for highway use. EPA therefore requests comment on whether it would be more appropriate to set the optional emission standards based on established highway standards, defining, for example, an engine meeting the 2004 highway emission standards as a Blue Sky Series engine.

Repeating the certification process to develop and submit test data to make a highway engine available for nonroad

use adds a significant hurdle to engines expected to sell in low volumes for nonroad applications. EPA therefore proposes for the Blue Sky Series engine program that manufacturers with highway-certified engines may waive the testing requirements for obtaining nonroad certification. This would include the need to comply with the provisions related to the durability of emission controls. EPA, however, would need to ensure that engine designs are not tailored to the transient cycle with much higher emissions on a steady-state cycle. To accommodate this, EPA would need to retain the ability to conduct in-use testing to verify that engines are operating in steady-state modes with substantially the same level of emission control. EPA therefore proposes that NO_X and PM emissions be no more than 20 percent higher on the appropriate nonroad steady-state test cycle compared with the highway test cycle. This is intended to provide relief for development testing needed to protect against in-use liability, while preventing any active strategies designed specifically for the transient test cycle at the expense of controlling emissions during steady-state operation. For evaluation of the performance of one of these engines in steady-state operation at any point in an engine's useful life, the Agency would conduct paired data generated on both the appropriate steady-state test cycle and the highway transient test cycle.

Engine manufacturers could generate credits under the averaging, banking, and trading program with Blue Sky Engines, provided that emission testing is also conducted on the appropriate steady-state test to facilitate calculation and exchange of credits. For this reason and for avoiding the uncertainty associated with surrogate test cycles, EPA would encourage manufacturers to conduct and submit steady-state test data with their application for certification even without a requirement to do so.

The Blue Sky Series program would begin immediately upon promulgation and would continue through the 2004 model year. EPA would evaluate the program to determine if it should be continued for 2005 and later engines, and if so, whether any changes are needed. This evaluation will be considered as part of the 2001 Feasibility Review. The experience gained with these engines and the Tier 3 resolution of certification test cycles and PM standards will factor into this evaluation.

c. Incentives for Producing Blue Sky Series Engines

Creating a program of voluntary standards for low-emitting engines, including testing and durability provisions to help ensure their in-use performance, will be a major step forward in advancing innovative emission control technologies, because EPA certification will provide protection against false claims of environmentally beneficial products. For the program to be most effective, however, incentives for the production of these engines must be created as well.

The Agency sees substantial potential for users and state and local governments to establish these incentive programs. For example, the increasing public concern about the effects of diesel engine emissions on health raises the possibility that some construction companies will purchase Blue Sky Series engines to protect its workers or the public from localized emissions, especially if benefits can also be gained in employee or public relations, such as with highly visible projects in polluted city centers. Similarly, a mining company could select these low-emitting engines for underground applications to minimize miners' exposure to exhaust pollutants. A state or local government may be able to add incentives for companies committing to rely on Blue Sky Series engines in contract bidding on publicly-funded construction projects in nonattainment areas. Some farmers may be willing to pay more for equipment with the cleaner engines to lower their field exposure to engine exhaust pollutants. In some of these applications, alternative fuels may be readily available, possibly even providing a cost savings compared to diesel fuel.

The Agency solicits ideas that could encourage the creation of these incentive programs by users and state and local governments. EPA also solicits comment on additional measures that that could be taken at a federal level to encourage these engines as well. One measure already suggested is adoption of a labeling program, by which EPA would regulate the form and display of prominent labels on equipment with Blue Sky Series engines. The Agency is not convinced at this point that such labels would provide sufficient incentive for users to purchase these engines to justify labeling requirements, but welcomes comment on this suggestion.

The Agency is concerned that incentive programs not lead to a net detriment to the environment through the double counting of benefits. For example, a manufacturer of a Blue Sky Series engine that claims credit under the averaging, banking, and trading program should not also be allowed to generate State Implementation Plan credit for emission reductions, such as under a state highway construction project program that encourages Blue Sky Series engines. The Agency intends to ensure that steps are taken to avoid such double counting of benefits.

IV. Technical Amendments

This proposed rule contains technical amendments to the procedures previously adopted for nonroad diesel engines (40 CFR part 89). These amendments result from the experience gained in conducting compliance programs for the recently implemented Tier 1 standards. Also, EPA's discussions with the industry on similar amendments related to testing highway engines have been translated into changes to nonroad test requirements where appropriate. This section describes proposed changes to the definition of rated speed and related terms and a variety of other modifications. A complete description of the technical amendments is detailed in a memorandum to the docket.[36]

A. Rated Speed Definition

EPA is proposing changes to the definitions of rated speed and intermediate speed. The current language allows the manufacturer to specify both of these speeds. Since these speeds are used to generate the test cycle, their definitions should permit only one rated and one intermediate speed for each engine. The proposed language links these speeds to speeds on the power and torque curves.

EPA is concerned that the current language allows a manufacturer to specify rated and intermediate speeds to any speeds. A manufacturer may specify these speeds to develop a less stringent test cycle. This test cycle would allow an otherwise failing engine to meet emission standards. Similarly, a manufacturer could take advantage of the current definitions by specifying speeds that maximize credits generated or minimize credits used in the Averaging, Banking, and Trading program.

Rated speed is proposed to be defined as the full load governed speed. The term full load is used to avoid confusion between the terms governed speed and high idle speed. High idle speed is the no-load governed speed. The maximum

[36] ''Justification for Amendments to 40 CFR Part 89,'' EPA memorandum from Greg Orehowsky to Docket A–96–40, August 21, 1997.

full load speed is the highest speed with an advertised power greater than zero. EPA is linking full load governed speed to advertisements at this time since no adequate language has been developed that mathematically defines full load governed speed as a point on the torque or power curve. Power curves in manufacturer's advertisements typically end at the governed speed. EPA believes that manufacturers will continue to advertise the full range of power of its engine. Therefore, manufacturers will not set rated speed at less than full load governed speed. It is unlikely that manufacturers will advertise powers beyond the full load governed speed since a manufacturer cannot guarantee their customers power beyond this point.

The change in the definition of rated speed should not have any effect on manufacturers. EPA does not believe that any manufacturer will need to recertify their engines because of this new definition. By linking the definition to advertisements, EPA will not require manufacturers to perform an engine map for compliance testing. The advertised value will be the test value.

EPA plans to evaluate the appropriateness of the rated speed definition in a future test program. EPA would prefer to have a technical definition of full load governed speed, possibly in terms of rate of change of power. Given the large power range of engines covered by these regulations, an adequate definition using a singular rate could not be determined at this time. EPA will continue to evaluate this possibility.

Since the steady state test cycles test engines at a maximum of three engine speeds, it is important to test at speeds representative of in-use operation to control emissions during in-use operation. As the shapes of power and torque curves vary with future engine design, the emissions from engines will vary. Testing at the full load governor speed regulates emissions at this speed but may not effectively limit emissions from the engine. As part of the planned evaluation of the steady-state test procedure, EPA intends to evaluate whether another speed, such as the speed at maximum power, is more effective at controlling emissions.

EPA is proposing to amend the intermediate speed definition to be consistent with the definition of intermediate speed for the smoke test procedure. This definition will eliminate the possibility of a manufacturer specifying an intermediate speed to lower emissions from the engine. The proposed definition provides for testing at a median engine speed while still linking the definition to the torque curve of the engine and being a speed representative of in-use operation.

B. Other Technical Amendments

Additional amendments make a variety of clarifications and correct typographical errors and omissions from the original rule. The most significant of these are described in the following paragraphs.

The amendments change the criteria for test engine selection. The current language bases test engine selection on the maximum fuel per stroke at maximum power. However, EPA had intended in the original rule to make the test engine selection based primarily on the highest fuel per stroke at peak torque and secondarily on the highest fuel per stroke at rated speed.

The calibration requirements for the gaseous emission measurement analyzers are modified in various ways. The requirements for measurement accuracy below fifteen percent of full scale are revised to include a specific number of gas concentrations at the low end of the calibration curve. Also, calibration requirements are simplified to allow laboratories to calibrate only one analyzer range and still ensure accurate measurements. Additional changes to calibration requirements for other equipment are described in EPA's memorandum to the docket.

Other modifications relate to the test sequence and calculation of emission results. A ''mode'' is defined and the procedure for dealing with void modes is included. The equations used to calculate emissions during raw sampling are corrected. The amendments also correct errors in the currently listed equations and include new equations that were mistakenly omitted.

V. Technological Feasibility

The emission standards proposed above would apply to a broad range of diesel engines used in a wide variety of nonroad applications. Section 213(a)(3) of the Clean Air Act calls for EPA to establish standards that provide for the ''greatest degree of emission reduction achievable through the application of technology which the Administrator determines will be available for the engines or vehicles to which such standards apply, giving appropriate consideration to the cost of applying such technology within the period of time available to manufacturers and to noise, energy, and safety factors associated with the application of such technology.'' This section describes EPA's understanding of the range of technologies that will be available for manufacturers to comply with the proposed standards. The costs associated with these technologies are considered in Section VI.B. EPA has concluded, as described in the Draft RIA, that the proposed standards will have no significant negative effect on noise, energy, or safety.

EPA has considered the diversity of the nonroad engine and equipment industries and believes that the standards being proposed will require the most advanced technology that will be available for the various engines classes in this time frame. While meeting these standards will be challenging, EPA believes compliance with the standards will be feasible for manufacturers, as described in the following discussion. In the course of the 2001 Feasibility Review, EPA will verify the appropriateness of the Tier 2 standards for engines rated under 37 kW and the Tier 3 standards for engines rated between 37 and 560 kW, including consideration of the same factors described above. A more detailed description of the technologies and their potential for controlling emissions is contained in the Draft RIA.

In developing the various numerical standards and implementation dates proposed in this notice, EPA depended heavily on extending the analysis of technological feasibility for the preceding proposal for highway heavy-duty engines. While the proposed standards for highway engines applied equally to all sizes of engines starting in the same year, the standards proposed in this notice are a complex combination of numerical values and applicable model years. Varying numerical standards were considered necessary to account for the very wide range of engines represented in nonroad applications. Also, because of the range of engines offered by individual manufacturers, EPA agreed with manufacturers that new standards could be implemented most expeditiously by phasing the standards in at different times for different power ranges. EPA applied a similar phase-in for the first tier of nonroad emission standards promulgated in 1994.

A. Development of the Implementation Schedule

The timing of the new and revised standards was calculated to maximize the introduction of emission-reduction technologies. For engines rated under 37 kW, introducing new Tier 1 standards for 1999 and 2000 is very aggressive. EPA considered the five years of lead time between Tier 1 and Tier 2 standards for these engines to be

necessary for manufacturers to recover their initial investment and prepare for the next round of changes.

For engines rated between 37 and 560 kW, the Tier 2 standards follow the introduction of comparable emission standards for highway engines. Within this range, engines rated between 225 and 450 kW were considered most susceptible to technologies transferred from highway engines and were therefore scheduled to be the first engines subject to the Tier 2 standards, starting in 2001. This provides three years following implementation of EPA's 1998 highway NO_X emission standard of 5.4 g/kW-hr (4.0 g/hp-hr) for manufacturers to incorporate highway-based technologies into nonroad engines to meet the Tier 2 standards, which are comparable to the 1998 highway standards. Other power ratings within this range follow over the next three years. Engines rated between 37 and 75 kW are the last ones in this group to be subject to Tier 2 standards; this additional lead time (until 2004) is due to the need for a greater effort to transfer technology from the larger highway engines to these engines, many of which are naturally aspirated. Proposed implementation of Tier 3 standards for these engines is scheduled between two and four years following the implementation of comparable emission standards for highway engines. Also, implementation of Tier 3 standards between 2006 and 2008 allows three to five years following implementation of the Tier 2 nonroad standards for different power ratings. EPA believes that implementing the proposed Tier 3 standards any sooner could either forego the potential of transferring highway technology or pose an unreasonably short period between the Tier 2 and Tier 3 standards for manufacturers to recoup their costs for complying with Tier 2 standards.

Engines rated over 560 kW are in a unique category. Because of the very low sales volumes of these engines, manufacturers need a longer period to recoup their development costs. For that reason, these engines and the associated equipment generally have much longer product development cycles. EPA has accordingly proposed only one additional tier of emission standard for these engines. Tier 2 standards would then apply beginning in 2006, six years after the Tier 1 standards take effect.

B. Development of Numerical Standards

The next paragraphs lay out the rationale for the numerical standards in this proposal (see Table 1 for emission standards). Individual technologies and the unique characteristics of various sizes of engines are considered in greater detail in the next section. Selecting the numerical standards involved a measure of extrapolation of information available for highway engines, with additional judgment to take into account the unique operating characteristics typical of nonroad applications of the various power ranges. For nonroad engines most similar to models available as highway heavy-duty engines, EPA made a relatively straightforward adjustment of the technological capabilities established for highway engines. Expectations for other engines, especially smaller models, were adjusted according to their size-related limitations, with the expectation that most of the control technologies were adaptable to any size diesel engine.

1. NMHC + NO_X

The targeted level of emission control for engines rated under 37 kW is based on engine designs utilizing direct injection, rather than the lower-emitting indirect injection designs. The direct injection engines have significantly better fuel economy; EPA therefore does not want to set emission standards that preclude the use of direct injection engines. The Tier 1 standards allow very little lead time, which limits the degree of control achievable from these engines. EPA chose a NMHC + NO_X standard of 9.5 g/kW-hr (7.1 g/hp-hr) for engines rated between 8 and 37 kW, expecting these engines to use similar technologies to those adopted for larger Tier 1 engines in response to EPA's 1994 rulemaking. Direct injection engines rated under 8 kW are expected to have a greater challenge reducing emissions in the near term, due to the design constraints related to the smaller cylinders and higher engine speeds, and would therefore be subject to a NMHC + NO_X standard of 10.5 g/kW-hr (7.8 g/hp-hr). The 1994 rulemaking set a NO_X standard of 9.2 g/kW-hr (6.9 g/hp-hr) for engines rated over 37 kW and an HC standard of 1.3 g/kW-hr (1.0 g/hp-hr) for engines rated over 130 kW. The technologies needed to meet this standard would generally involve combustion chamber optimization and timing retard, both of which are well established for diesel engines and should be readily adaptable to the smaller engine models.

The proposed Tier 2 and Tier 3 numerical standards for NMHC + NO_X emissions are derived most directly from highway engines. Engines rated over 75 kW were believed to have little difficulty in transferring technology developed for highway engines. Two principal factors were considered in selecting the numerical standard. First, though nonroad engines have much in common with their highway counterparts, some aspects of operation in nonroad applications differs significantly from that of highway engines. The main distinction in nonroad applications is the lack of high-speed air for cooling the engine and intake air (after being heated by a turbocharger). Less effective heat transfer in the aftercooler translates into higher combustion temperatures and higher levels of NO_X formation. Second, the different test cycles specified for certification testing prevent a direct translation of numerical standards; however, as described in Section III.B. above, test data shows that NO_X and HC levels are roughly comparable on the highway test cycle and the primary nonroad test cycle (C1). Taking these factors into consideration led EPA to choose numerical standards for NMHC + NO_X approximately 0.7 g/kW-hr (0.5 g/hp-hr) higher than the comparable highway standards for nonroad engines rated over 75 kW. The resulting NMHC + NO_X standards are either 6.4 or 6.6 g/kW-hr (4.8 or 4.9 g/hp-hr) for Tier 2 engines and 4.0 g/kW-hr (3.0 g/hp-hr) for Tier 3 engines.

Engines rated under 75 kW have additional distinctions relative to highway engines. These engines are typically naturally aspirated, in which case they do not have the benefit of a turbocharger and aftercooler for controlling intake air characteristics. These engines also have progressively smaller cylinder displacements and higher rotation speeds, which increase the challenge of controlling the combustion event. The proposed numerical standards for these engines are therefore set higher than those for larger engines. The proposed Tier 2 NMHC + NO_X standard for all engines rated under 75 kW is 7.5 g/kW-hr (5.6 g/hp-hr). Similarly, the proposed Tier 3 NMHC + NO_X standard for engines rated between 37 and 75 kW is 4.7 g/kW-hr (3.5 g/hp-hr)

2. PM

In 1994, EPA set a PM standard of 0.54 g/kW-hr (0.40 g/hp-hr), using the steady-state ISO C1 cycle, for engines rated over 130 kW. EPA is interested in the possibility of developing a nonroad transient test for greater assurance of reduced PM emissions in the field. Because there is still no such cycle established for nonroad engines, EPA is proposing to adopt PM standards that represent the greatest degree of control appropriate for testing on the current test cycles in the Tier 2 time frame, including engines of all power ratings.

More stringent PM standards for Tier 3 are not included in the proposal, with the hope that questions related to test cycles can be resolved in time for a subsequent action, if appropriate.

For engines rated over 130 kW, EPA proposes a Tier 2 PM standard of 0.20 g/kW-hr (0.15 g/hp-hr). For the same reasons described above for NMHC and NO_X emissions, EPA expects smaller engines to face a greater challenge in controlling PM emissions. The proposed Tier 2 PM standard for engines rated between 75 and 130 kW is therefore set at 0.30 g/kW-hr (0.22 g/hp-hr); the comparable standard for engines rated between 37 and 75 kW is 0.40 g/kW-hr (0.30 g/hp-hr). For engines rated under 37 kW, EPA is proposing new PM standards for both Tier 1 and Tier 2 engines. The near-term standards for Tier 1 engines are 1.0 and 0.80 g/kW-hr (0.75 and 0.60 g/hp-hr) for engines rated under 8 kW and engines rated between 8 and 37 kW, respectively. Proposed Tier 2 standards are set at 0.80 and 0.60 g/kW-hr (0.60 and 0.45 g/hp-hr) for engines rated under 19 kW and engines rated between 19 and 37 kW, respectively.

3. CO

Formation of CO in diesel combustion is inhibited by the presence of excess oxygen, resulting in relatively low CO emissions without any active control strategies. Setting numerical standards for CO emissions therefore serves largely to prevent unexpected problems. Where two tiers of standards are set forth in this proposal, the numerical CO standard is the same for both tiers. Again, the largest engines have the lowest numerical standard.

C. Technological Approaches

Because the proposed emission standards for nonroad diesel engines depend on the evaluation of technologies for complying with the standards for highway engines, the discussion of technological feasibility in that rulemaking is central to supporting the feasibility of the proposed standards for nonroad engines. This analysis of diesel engine technologies is contained in Chapter 4 of the Draft RIA for the highway rule.[37] This analysis is considered and applied to nonroad engines in Chapter 3 of the Draft RIA for this proposal, which is summarized in the following paragraphs.

By proposing multiple tiers of standards that extend well into the next decade, EPA is providing engine manufacturers with substantial lead time for developing, testing, and implementing emission control technologies. This lead time and the coordination of standards with those for highway engines allows time for a comprehensive R&D program to integrate the most effective emission control approaches into the manufacturers' overall design goals related to durability, reliability, and fuel consumption.

To meet the emission standards proposed above, manufacturers would need to move beyond the steps used to comply with the first phase of nonroad engine controls. Understanding the control technologies applied to engines complying with the Tier 1 standards is important in assessing the feasibility of meeting more stringent numerical standards. Engines rated between 75 and 560 kW have begun to comply with the first nonroad emission standards, providing a clearer picture of the starting point from which manufacturers of these engines will be working to reduce emissions for subsequent emission standards. In the case of manufacturers of engines rated under 37 kW, the standards proposed in this notice would represent the first emission requirements for these engines under EPA regulations; the starting point for improving emissions would therefore be focused on basic engine technology with new emission controls.

Highway heavy-duty engines will be subject to a 5.4 g/kW-hr (4.0 g/hp-hr) NO_X standard beginning in the 1998 model year. For those manufacturers that produce engines for both highway and nonroad service, variations on a single engine model are sometimes sold for both markets. Because these engines have similar emission levels on the eight-mode test, they could likely comply with the proposed Tier 2 NMHC + NO_X standards with relatively minor modifications to adapt the technology to nonroad applications. Similarly, Tier 3 standards are intended to follow the highway engine standards proposed for the 2004 model year, with the expectation that technology transfer will be a very important element of achieving compliance with the nonroad standards. Even where engines are dedicated to nonroad applications, the very similar engine design makes clear that much of the technological development that has led to lower-emitting highway engines can be transferred or adapted for use on nonroad engines. Specifically, much of the improvement in highway engines has come from ''internal'' engine changes such as variation in fuel injection variables (injection pressure, spray pattern, rate shaping), modified piston bowl geometry for better air-fuel mixing, and improvements intended to reduce oil consumption. Introduction and ongoing improvement of electronic controls have played a vital role in facilitating many of these improvements.

Other technological developments for highway heavy-duty engines require a greater degree of development before they can be applied to nonroad engines. Turbocharging is widely used now in nonroad applications, especially in larger engines, because it improves power and efficiency by compressing the intake air. Turbocharging can also decrease PM emissions; however, changing an engine from naturally aspirated to turbocharged may raise concerns about ''packaging,'' since with the added turbocharger the equipment may have to be adapted to accommodate a physically larger engine. The concern for packaging is especially sensitive for small, compact equipment designs. Space constraints, though, are generally a matter of cost rather than feasibility and are further addressed in the discussion of cost to equipment manufacturers. Turbochargers increase the power density of engines, but switching to a smaller engine with equivalent power may require substantial equipment redesign. EPA expects that, over the long term, equipment specifications will be updated to take advantage of the substantial growth in power density from all engines; however, the difficulty of making this transition prevents any straightforward analysis of addressing engine packaging concerns with more compact engines.

Aftercooling is a well established highway engine technology that has only recently been widely used in nonroad engines. The aftercooler chills the hot air coming from the turbocharger before it enters the cylinder, which decreases fuel consumption and helps prevent NO_X formation by reducing combustion temperatures. Air-to-water aftercoolers, which use the engine's coolant to provide partial cooling of the the intake air, can fit readily into most engine applications. In the long term, manufacturers are expected to move toward air-to-air aftercooling, which provides much better benefits for fuel economy and NO_X control. Because of the additional space required for air-to-air aftercoolers (for a separate heat exchanger and a bigger fan), these improved aftercoolers may in some cases be integrated when equipment manufacturers are ready to rework the overall designs for their equipment models.

[37] ''Draft Regulatory Impact Analysis: Control of Emissions of Air Pollution from Highway Heavy-Duty Engines,'' U.S. EPA, June 6, 1996 (Docket A–95–27).

In evaluating the feasibility of the proposed nonroad standards, it is helpful to separately consider three broad categories of engines. First, manufacturers of turbocharged nonroad diesel engines, most often rated over 75 kW, generally have the flexibility to incorporate more sophisticated technological innovations for performance, fuel economy, and emission control, including those derived from counterpart highway engines. Electronic controls offer great potential for improved control of engine operating parameters for better performance and lower emissions. Unit pumps or injectors would allow higher-pressure fuel injection with rate shaping to carefully time the delivery of the whole volume of injected fuel into the cylinder. Routing of the intake air and the shape of the combustion chamber can be redesigned for improved mixing of the air-fuel charge. Air-to-air aftercooling will likely gain widespread use in turbocharged engines, primarily for its fuel consumption and durability benefits, though it also lowers NO_X emissions. Manufacturers will be able to combine many of these technologies to comply with Tier 2 standards. Tier 3 standards will require deployment of additional technologies. Common rail injection systems provide greater overall control of the fuel injection strategy by maintaining a constant supply of high-pressure fuel at the injectors. Also, exhaust gas recirculation will likely be introduced in highway diesel engines over the next several years, providing valuable experience in developing those systems for nonroad engines. EPA believes these technologies will be important in achieving compliance with Tier 3 emission standards. A more detailed treatment of the feasibility of these engines meeting the proposed standards is included in the regulatory impact analyses, as described above. Because the long-term standards depend on significant progress in technology development, EPA will be reviewing requirements for Tier 3 engines by 2001 to confirm that developments are progressing as expected.

The second category is the set of water-cooled naturally aspirated engines, which are most often rated under 50 or 75 kW. The lack of turbocharging (and aftercooling) and the greater sensitivity to increased costs for these relatively inexpensive engines suggest that manufacturers will likely depend on basic technologies to control emissions to the necessary levels. Expected changes can be divided into two broad categories. First, combustion optimization includes changes to basic engine design for improved air-fuel mixing and management of the combustion process. These changes might include retarded injection timing, re-entrant piston bowl shapes, greater swirl of the intake air, and improved ring design for lower oil consumption. Second, fuel injection parameters provide many variables for the engine designer. Manufacturers might modify fuel pumps, injectors, or controls to achieve higher injection pressures, more rapid injection, better control of injection timing (including rate shaping), and reduced sac volume. In addition to exhaust emission control strategies, emissions from the crankcase of naturally aspirated engines can be eliminated by routing vapors from the crankcase directly to the air intake. These technological developments are well understood and should provide manufacturers with the tools needed to comply with Tier 1 and Tier 2 standards for engines rated under 37 kW. Similarly, engines rated between 37 and 75 kW should be able to comply with Tier 2 standards using these technologies; compliance with Tier 3 standards may in addition require use of exhaust gas recirculation. EPA believes these engines can meet the proposed emission standards without needing to incorporate turbocharging. EPA believes that increasing the numerical NMHC + NO_X standard by 0.9 g/kW-hr (0.7 g/hp-hr) relative to the larger engines appropriately compensates for the design constraints imposed by these engines.

Third, many of the air-cooled diesel engines rated under 8 kW face unique design challenges. The small cylinders and low cost of these engines limit the flexibility of designing or adapting technologies to control emissions. Tier 1 standards for these engines are therefore set at less stringent levels than larger engines. To reach these levels, manufacturers will need to rely on several of the strategies used for other engines. For example, increasing swirl and redesigning piston head geometries can be an effective way of improving fuel-air mixing in small engines, with the additional benefit of allowing higher injection pressures without increasing fuel wetting on the cylinder walls. The position and design of piston rings can be improved to reduce the contribution of engine oil to particulate emissions. Incorporating fuel injectors that provide mechanically controlled rate shaping would allow substantial control of NO_X emissions at a low cost. Using injectors with valve-closed-orifice nozzles would similarly control HC emissions. Engines that operate within a relatively narrow range of engine speeds can achieve a degree of charge-air compression with intake manifold designs that rely on pulse tuning. The unique characteristics of the smallest engines pose a challenge to the designer, but these and other technologies are available for complying with the Tier 1 and Tier 2 standards. Also, certification data from the California ARB shows that most direct injection diesel engines rated under 19 kW are currently emitting between 8 and 11 g/kW-hr (6 and 8 g/hp-hr) NMHC + NO_X; all these engines will need to improve, but the current best performers support the feasibility of the Tier 1 and Tier 2 standards for all these engines.

Finally, any engines relying on natural aspiration technology are also subject to the proposed requirement to eliminate crankcase emissions. This requirement has long been in place for naturally aspirated highway engines. EPA believes that the technology required to close the crankcase is well established and easily transferrable to any size of nonroad engine.

D. Conclusions Regarding Technological Feasibility

The standards set by this proposal are the most challenging that can be justified in this time frame. Engine manufacturers will need to use the available lead time to develop the necessary emission control technologies, including transfer of technology from highway engines. This development effort will require not only achieving the targeted emission levels, but also ensuring that each engine will meet all performance and emission requirements over its useful life. The proposed standards clearly represent major reductions compared with current emission levels.

Emission control technology for diesel engines is in a period of rapid development in response to the range of emission standards anticipated for the years ahead. This effort will need to continue to meet the requirements in this proposal. However, the emission targets are set in the framework of a long lead time, which provides manufacturers the time they will need to apply emission control technology developments to nonroad engines. Also, the experience gained in response to EPA's emission standards for highway engines will be invaluable in meeting the comparable requirements for nonroad engines. Because the technology development for highway engines will to a large extent constitute basic research of diesel engine combustion, this effort will also benefit manufacturers that produce no highway engines.

On the basis of information currently available, EPA believes that it is feasible for nonroad diesel engine manufacturers to meet the standards proposed in this notice within the the proposed time frame, using combinations of the technological approaches discussed above and in the Draft RIA. In addition, EPA believes that the flexibilities incorporated into this proposal will permit nonroad vehicle and equipment manufacturers to respond to engine changes in an orderly way. For both industries, EPA expects meeting these requirements will pose a significant challenge. As described above, EPA plans to assess, as part of the 2001 Feasibility Review, the appropriateness of the proposed Tier 3 standards and the proposed Tier 2 standards for engines rated under 37 kW.

VI. Projected Impacts

A. Environmental Impacts

To assess the environmental impact of the proposed standards, EPA has created a computer program for predicting emissions from the nonroad equipment covered by this proposal. A memorandum describing the computer program has been placed in the public docket for this rulemaking.[38] Chapter 5 of the Draft RIA also contains a thorough discussion of the methodology used to project the emission inventories and emission reductions from nonroad equipment covered by the proposed standards. The reader is directed to both of these documents for more information on the environmental impact of this proposal. EPA requests comment on all aspects of the computer program and the methodology for projecting the emissions impact of the proposed standards.

The amount of growth experienced in the nonroad market will have a significant impact on the emission inventories and emission reductions expected from the proposed standards. For this environmental impact analysis, EPA has examined the impact of the proposed standards under two different growth scenarios. (The growth rates used in the nonroad modeling are compounded growth rates.) The first scenario uses the growth rates developed by the Bureau of Economic Analysis (BEA). The BEA growth rates, which are based on a variety of economic indicators, vary by nonroad segment (i.e., agriculture, construction, etc.) and typically range from one to two percent per year. However, based on trends in nonroad equipment sales, trends in nonroad fuel usage, and the continuing strong performance of the U.S. economy, EPA believes that the BEA growth rates may underestimate the future growth of the nonroad market. Therefore, EPA has also modeled the impact of the proposed standards using a moderately higher growth rate of three percent for all nonroad segments. EPA believes the results from the two growth scenarios serve to bracket the expected environmental impact of the proposed standards. The following discussion of environmental impacts presents the results from both the BEA growth scenario and the three percent growth scenario. EPA requests comments on the appropriateness of the BEA growth rates and the three percent growth rate.

EPA modeled the impact of the proposed standards for NO_X, NMHC, and PM emissions. The modeling inputs conservatively assume that equipment manufacturers take full advantage of the flexibility provisions described earlier. EPA did not model the impacts of the proposed standards on CO because CO emissions from nonroad diesel equipment are a very small portion of the overall CO inventory and the proposed standards are not expected to have a significant impact on CO levels.

Because of the uncertainties about the degree to which the steady-state test procedure will control PM emissions in use, especially from the many nonroad engines that frequently operate in transient modes, EPA cannot be certain that any assessment of expected PM emission reductions made at this time will be completely accurate. Nevertheless, EPA has attempted to make a reasonable estimate of these reductions by assuming an in-use per-engine reduction equal to the difference between the Tier 1 and proposed standards. The baseline levels used in this analysis are consistent with the position taken in the Tier 1 rule that no PM benefits are claimed from the Tier 1 PM standard. EPA believes that this approach provides a reasonable estimate of PM benefits from the proposed standards but actual benefits could vary significantly from these levels.

Based on the results of the modeling, the expected emission benefits from the proposed standards are quite substantial. Tables 5, 6, and 7 contain the nationwide NO_X, NMHC, and PM inventories, respectively, under the baseline scenario, which assumes only the current Tier 1 standards are in effect, and under the control scenario, which assumes the proposed standards take effect. (The PM reductions contained in Table 7 are direct PM and do not include secondary PM benefits, which are described below.) By 2020, the emission reductions due to the proposed standards reach 50 percent for NO_X, 15 percent for NMHC, and 20 percent for PM. All percentages are calculated relative to the baseline inventories, which assumes only the current Tier 1 standards are in effect.

TABLE 5.—NO_X EMISSIONS INVENTORY FROM NONROAD DIESEL ENGINES

[Short tons]

Calendar year	BEA growth rates		3% growth rates	
	With the current standards	With the proposed standards	With the current standards	With the proposed standards
2000	2,920,000	2,890,000	3,150,000	3,120,000
2010	2,740,000	1,850,000	3,450,000	2,330,000
2020	3,070,000	1,460,000	4,520,000	2,150,000

[38] ''Nonroad CI Nodeling Methodology and Request for Comment,'' EPA memorandum from Peter J. Caffrey to Docket A–96–40.

TABLE 6.—NMHC EMISSIONS INVENTORY FROM NONROAD DIESEL ENGINES

[Short tons]

Calendar year	BEA growth rates		3% growth rates	
	With the current standards	With the proposed standards	With the current standards	With the proposed standards
2000	503,000	497,000	543,000	536,000
2010	582,000	509,000	730,000	638,000
2020	673,000	541,000	980,000	789,000

TABLE 7.—PM EMISSIONS INVENTORY FROM NONROAD DIESEL ENGINES

[Short tons]

Calendar year	BEA growth rates		3% growth rates	
	With the current standards	With the proposed standards	With the current standards	With the proposed standards
2000	478,000	476,000	515,000	513,000
2010	553,000	483,000	693,000	606,000
2020	639,000	534,000	931,000	778,000

In addition to the effect of the proposed emission standards on direct PM emissions noted above, the proposed standards are expected to reduce the concentrations of secondary PM. Secondary PM is formed when NO_X reacts with ammonia in the atmosphere to yield ammonium nitrate particulate. SAI, under contract with EPA, recently evaluated the effect of the NO_X reductions on the formation of nitrate particulate.[39] The report concluded that, as a national average, each 100 tons of NO_X reduction will result in about 4 tons of secondary PM reduction. This conversion rate varies from region to region, and is greatest in the West. EPA estimates that the approximately 1.6 million tons per year of NO_X reduction projected in 2020 resulting from this proposal (assuming BEA growth rates) will result in a national average of about 64,000 tons per year reduction in secondary PM. This level of secondary PM reduction represents about 60 percent of the projected direct PM reductions presented in Table 7.

B. Economic Impacts

In assessing the economic impact of changing the emission standards, EPA has made a best estimate of the combination of technologies that an engine manufacturer might use to meet the new standards at an acceptable cost. While equipment manufacturers bear no responsibility for meeting emission standards, they will need to make changes in the design of their equipment models to accommodate the new engines. EPA's treatment of the impacts of the proposal therefore includes an analysis of costs for equipment manufacturers. Full details of EPA's cost and cost-effectiveness analyses can be found in Chapters 4 and 6 of the Draft RIA.

Estimated cost increases are broken into purchase price and total life-cycle operating costs. The incremental purchase price for new engines and equipment is comprised of variable costs (for hardware and assembly time) and fixed costs (for R&D, retooling, and certification). Total operating costs include any expected increases in maintenance or fuel consumption. Cost estimates based on these projected technology packages represent an expected incremental cost of engines as they begin to comply with new emission standards. Costs in subsequent years would be reduced by several factors, as described below. Separate projected costs were derived for engines and equipment used in six different ranges of rated power; costs were developed for engines near the middle of the listed ranges. All costs are presented in 1995 dollars. Life-cycle costs have been discounted to the year of sale. EPA requests comment on all aspects of the economic impact analysis.

1. Engine Technologies

The following discussion provides a brief description of those technologies EPA projects will be needed to comply with the new emission standards. In some cases it is difficult to make a distinction between technologies needed to reduce emissions for compliance with emission standards and those technologies that offer other benefits for improved fuel economy, power density, and other aspects of engine performance. EPA believes that without new emission standards, manufacturers would continue research on and eventually deploy many technological upgrades to improve engine performance or more cost-effectively control emissions. Turbocharging, aftercooling, and variable-valve timing are examples of technologies whose primary benefit is for improved performance. Modifications to fuel injection systems and the introduction of electronic controls will also continue, regardless of any change in emission standards, to improve engine performance. Some further development with a focus on NO_X, HC, and PM emissions will nevertheless play an important role in achieving emission reduction targets.

A variety of technological improvements are projected for complying with the multiple tiers of proposed emission standards. Selecting these technology packages requires extensive engineering analysis and judgment. The fact that manufacturers have nearly a full decade before implementation of the most challenging of the proposed standards ensures that technologies will develop significantly before reaching production. This ongoing development will lead to reduced costs in three ways. First, research will lead to enhanced effectiveness for individual technologies, allowing manufacturers to use simpler packages of emission

[39] ''Benefits of Mobile Source NO_X Related Particulate Matter Reductions,'' Systems Applications International, EPA Contract No. 68–C5–0010, WAN 1–8, October 1996 (available in Air Docket A–96–40).

control technologies than we would predict given the current state of development. Similarly, the continuing effort to improve the emission control technologies will include innovations that allow lower-cost production. Finally, manufacturers will focus research efforts on any potential drawbacks, such as increased fuel consumption or maintenance costs, attempting to minimize or overcome any negative effects.

A combination of technology upgrades are anticipated as a result of the proposed emission standards. Modifications to basic engine design features, such as piston bowl shape and engine block and head geometry, can improve intake air characteristics and distribution during combustion. For this analysis, EPA anticipates that manufacturers will make these basic engine modifications for the first tier of proposed standards. These redesigned engines are then expected to serve as a platform for the other changes anticipated for the next tier of standards. This will be less true for engines rated under 37 kW, which have less time to incorporate design changes before Tier 1 standards become effective. Manufacturers are expected to introduce electronic controls on some engines. Advanced fuel-injection techniques and hardware will allow designers to modify various fuel injection parameters for higher pressure, further rate shaping, and some split injection. For Tier 3 standards, EPA expects that many engines will see further fuel injection improvements and will incorporate a moderate degree of cooled exhaust gas recirculation. Details of the mix of technologies included in the cost analysis can be found in Chapter 4 of the Draft RIA.

While the following analysis projects a relatively uniform emission control strategy for designing the different categories of engines, this should not suggest that EPA expects a single combination of technologies will be used by all manufacturers. In fact, depending on basic engine emission characteristics, EPA expects that control technology packages will gradually be fine-tuned to different applications. Furthermore, EPA expects manufacturers to use averaging, banking, and trading programs as a means to deploy varying degrees of emission control technologies on different engines. EPA nevertheless believes that the projections presented here provide a cost estimate representative of the different approaches manufacturers may ultimately take.

2. Engine Costs

The projected costs of these new technologies for meeting the proposed standards are itemized in the Draft RIA and summarized in Table 8. For the proposed Tier 1 standards for engines rated under 37 kW, estimated costs vary widely. Those engines that already operate with emissions low enough to meet the proposed Tier 1 standards would bear costs only for closing the crankcase and certifying the engine, or about $20 per engine. For the remaining one-third of engines expected to need reduced emissions, adding engine modifications leads to total costs of around $70. The anticipated increase in operating costs would similarly be focused on the minority of engines that need design improvements, totaling about $220 in net present value (npv) over the lifetime of those engines. The calculated sales-weighted composite increase in both the purchase price and the operating costs for all engines rated under 37 kW is $75 or less.

TABLE 8.—PROJECTED UNIT COSTS—ENGINES

Cost category	Year of production	Power (kW)					
		0–37	37–75	75–130	130–450	450–560	560+
Tier 1							
Incremental purchase price	1	$53	.....	.....	.....	.....	.....
Life-cycle Operating costs (npv)	all	73	.....	.....	.....	.....	.....
Tier 2							
Incremental purchase price	1	28	180	321	328	916	1214
Life-cycle Operating costs (npv)	all	0	0	0	0	0	0
Tier 3							
Incremental purchase price	1	.....	322	424	436	1645	.....
	6		111	177	194	291	
Life-cycle Operating costs (npv)	all	.....	89	103	125	180	.....

Tier 2 standards, which apply to to the full range of power ratings, involve higher estimated cost impacts. The set of technologies anticipated for Tier 2 engines, including engine modifications, improved fuel injection and some use of electronic controls, are not expected to cause any increase in operating costs, as described in the Draft RIA. The price of engines rated under 450 kW is expected to increase by up to $330, while engines rated over 450 kW may see price increases approaching or exceeding $1,000. The projected cost of compliance with Tier 3 standards entails increases from Tier 2 costs that follow a similar pattern to the increases for Tier 2 standards, though the proposed Tier 3 standards apply only to engines rated between 37 and 560 kW.

Characterizing these estimated costs in the context of their fraction of the total purchase price and life-cycle operating costs is helpful in gauging the economic impact of the proposed standards. ICF conducted a study to characterize the range of current engine costs.[40] Although the incremental cost projections in Table 8 increase dramatically with increasing power rating, they in fact represent a comparable price change relative to the total price of the engine. The estimated cost increases for all engines are between 2 and 10 percent of estimated engine prices (after typical discounts and rebates). Moreover, the cost savings

[40] ''Engine Price (On-Highway and Nonroad) & Life-cycle Cost Methodology,'' memorandum from Thomas Uden, ICF, Inc. to Alan Stout, U.S. EPA, March 21, 1997 (available in Air Docket A–96–40).

described below would further reduce the impact of the proposed emission standards; long-term cost increases are expected to be 4 percent of total engine price or less.

Another way of evaluating the variation of compliance costs with increasing power rating is to compare the ratio of projected cost to rated power (in kilowatts). For the Tier 2 standards, engines rated under 130 kW all have cost-per-kilowatt ratios near 3.5, while the ratios for larger engines is around 1.5. This shows again that the apparently high projected compliance costs for the largest engines, upon closer analysis, are consistent with their greater size and price.

For the long term, EPA has identified two principal factors that would cause the estimated incremental costs to decrease over time. First, since fixed costs are assumed to be recovered over a fixed period, these costs disappear from the analysis after they have been fully recovered. This has a most striking effect on the projected costs for engines rated over 450 kW, for which the much higher projected costs are dominated by fixed costs. Second, the analysis incorporates the expectation that manufacturers will apply ongoing research to making emission controls more effective and less costly over time. Research in the costs of manufacturing has consistently shown that as manufacturers gain experience in production, they are able to apply innovations to simplify machining and assembly operations, use lower cost materials, and reduce the number or complexity of component parts.[41] The analysis incorporates the effects of this learning curve by projecting that the variable costs of producing the low-emitting engines decreases by 20 percent starting with the third year of production and by reducing variable costs again by 20 percent starting with the sixth year of production. Table 8 lists the projected costs for each category of vehicle over time, including the set of numbers that illustrate the projected reduction in long-term costs for Tier 3 engines.

3. Equipment Costs

In addition to the costs directly associated with engines that are redesigned to meet new standards, costs may also result from the need to redesign the nonroad equipment in which these engines are used. Such redesigns, though not generally technologically challenging, could occur if the engine has a different shape or heat rejection rate, or is no longer made available in the configuration previously used. Based on their experience with the Tier 1 standards set in 1994, equipment manufacturers have told EPA that the main barrier to accommodating complying engines is the late delivery of such engines by engine manufacturers, which cuts into the lead time that equipment manufacturers need to properly redesign their equipment. Thus, attempts were made in the developing this proposal to provide stability and predictability in the setting of standards so engine and equipment manufacturers can more easily plan their product releases and can reasonably recoup the investment made to meet the standards.

In addition, the Tier 3 emission standards and implementation dates for engines rated over 37 kW and Tier 2 emission standards and implementation dates for engines rated under 37 kW are based on the premise that no significant equipment redesign beyond that required to accommodate engines meeting the previous tier of standards will be required to accommodate the new engines. Equipment manufacturers may, of course, choose to spread equipment redesigning over the time frame for both first and second tiers of standards. This analysis accounts for this flexibility by projecting one major redesign for each equipment model, spreading the costs of these redesigns over both tiers of standards. For each tier of standards, EPA projects that equipment manufacturers will have sufficient opportunity to accommodate complying engines and to market their product. EPA will consider the potential for multiple design changes to equipment models during the 2001 Feasibility Review.

In assessing the economic impact of the proposed emissions standards, EPA has made a best estimate of the modifications to equipment that relate to packaging (installing engines in equipment engine compartments), power train (torque curve), and heat rejection effects of the new complying engines. The incremental purchase price for new engines is comprised of fixed costs (for R&D and retooling) and variable costs (for hardware and assembly time for a small percentage of the equipment). In its analysis, EPA attributes all increases in operating costs (i.e., expected increases in maintenance or fuel consumption) to incremental engine costs, and thus, equipment costs do not include operating costs. As described in the engine cost section above, after a new standard takes effect, projected costs in subsequent years would be reduced by several factors. Separate projected costs were determined for equipment in the same ranges of power ratings used for engine costs. Full details of EPA's equipment cost analysis can be found in Chapter 4 of the Draft RIA.

a. Projected Equipment Changes: Key measures being taken by engine manufacturers to meet the Tier 1 standards set in 1994 are retarding the injection timing and adding air-to-water aftercooling. EPA projected in the Tier 1 rulemaking that, though the standards may lead to some additional heat rejection, it would not add enough heat rejection to require equipment changes such as increasing the cooling capacity and cooling fan speed (i.e., change the size of radiators or cooling fan blades).[42] However, equipment manufacturers claim that such changes are occurring due to Tier 1 standards. For the most part, this additional heat rejection occurred due to the retarded injection timing, and thus some equipment manufacturers needed to increase the size of their radiators to accommodate these Tier 1 engines. Some equipment manufacturers also increased the engine fan speed for additional airflow and cooling (increasing engine fan size can increase fan speed). In some cases, equipment manufacturers experienced a small increase in fuel consumption. In many cases equipment manufacturers needed to alter the engine compartment to accommodate these changes as well as making room for added turbochargers and aftercoolers.

A small percentage of equipment is projected to have modifications to the radiator and the engine fan to compensate for some additional heat rejection resulting from the proposed emission standards. Equipment with direct injection engines rated under 37 kW (about one third of the equipment in that size range) are expected to meet the proposed standards through retarded injection timing, which is expected to lead to some additional heat rejection. Some equipment/engines introducing or improving air-to-water aftercooling may still require more heat rejection and thus a somewhat larger radiator and fan, because the engine coolant would be routed (and thus heated up) through both the radiator and the aftercooler. Many equipment manufacturers are expected to install engines using air-to-

[41] ''Learning Curves in Manufacturing,'' Linda Argote and Dennis Epple, Science, February 23, 1990, Vol. 247, pp. 920–924 (available in Air Docket A–96–40).

[42] U.S. EPA, Final Regulatory Impact Analysis and Regulatory Support Document, ''Control of Air Pollution; Determination of Significance for Nonroad Sources and Emission Standards for New Nonroad Compression-Ignition Engines at or Above 37 Kilowatts (50 Horsepower),'' May 27, 1994 (found in Air Docket A–91–24, item VI–B–1).

air aftercooling, which greatly reduces the heat load compared with current air-to-water aftercooling models. Also, no more retarding of the timing is expected for these engines as a result of the proposed emission standards. Therefore, no increase in heat rejection and thus in the size of the radiator and engine fan is expected for equipment with air-to-air aftercooling. However, even with air-to-air aftercooling, some equipment may need a larger engine fan (increase engine fan size or speed), because there may be some reduction in the airflow out of the engine compartment due to the aftercooler. In addition, exhaust gas recirculation may lead to some additional heat load in the Tier 3 time frame.

With sufficient lead time provided, engine and equipment manufacturers are expected to have an opportunity to integrate several changes not directly related to emission control (i.e., air-to-air aftercooling). Therefore, the equipment changes are projected to be needed only to compensate for some additional heat rejection. Thus, EPA estimated that a small percentage of the equipment would have an increase in the size of their radiators and cooling fans to accommodate the new complying engines. In addition, for engine compartment modifications (engine panels, brackets, etc.), EPA estimated that, for all power ranges, a large percentage of the equipment would need additional miscellaneous steel since it is expected that many nonroad equipment models would need some additional steel in accommodating complying engines.

b. Projected Equipment Costs: The costs of the projected equipment changes due to the proposed standards are itemized in the Draft RIA and summarized in Table 9. The effort for the R&D and tooling was estimated for modifying equipment in all the above power categories based on those changes needed to accommodate the engine technology modifications described earlier in this preamble. In addition, variable costs for engine compartment, radiator, and engine fan changes as described in the above section were added for all the equipment power categories. For all the power categories it was estimated that equipment manufacturers would expend significant effort to generally redesign the engine compartments of their equipment due to emissions control and its related effects.

TABLE 9.—PROJECTED UNIT COSTS

Tier	Power (kW)					
	0–37	37–75	75–130	130-450	450-560	560+
Tier 1:						
Equipment	$12	.....	.....	.....	.....	.....
Total Engine and Equipment	65	.....	.....	.....	.....	.....
Tier 2:						
Equipment	5	55	137	118	159	136
Total Engine and Equipment	33	235	458	446	1,075	1,350
Tier 3 short-term:						
Equipment	.....	18	46	39	53	.....
Total Engine and Equipment	.....	340	470	475	1,698	.....
Tier 3 long-term:						
Equipment	.....	1	2	4	4	.....
Total Engine and Equipment	.....	112	179	198	295	.....

For the proposed Tier 1 standards that apply to equipment with engines rated under 37 kW, the estimated composite cost increase is $12 per piece of equipment. As described in the Engine Cost section, this cost estimate is based on the determination that a large percentage of the engines for this range of equipment already operate with emissions low enough to meet the Tier 1 standards.

For Tier 2 standards, the low engine costs for equipment rated under 75 kW reflect the relatively high sales volume of this range even though most of the equipment would need relatively more effort for accommodating complying engines versus equipment with engines rated over 75 kW. The highest projected cost of $159 for equipment utilizing engines rated between 450 and 560 kW demonstrates that high per-equipment piece costs are due to amortizing large fixed costs over small sales volumes even though most of the equipment in this large power range would require relatively less effort in accommodating complying engines. Also, the higher projected cost of $137 for equipment with engines rated between 75 and 130 kW results from amortizing slightly lower fixed costs compared to ratings under 75 kW over a much smaller sales volume.

The projected incremental cost of complying with Tier 3 standards are lower than that for Tier 2 standards, because EPA expects most of the significant changes to equipment designs would occur for Tier 2 standards (the previous or first set of standards). For Tier 3 standards, equipment with engines rated between 37 and 560 kW are expected to have incremental costs ranging from $18 to $53. In addition, EPA estimated that, for equipment with engines rated under 37 kW, the incremental cost of Tier 2 standards is only $5.

As discussed in the Engine Cost section, characterizing both these estimated incremental equipment and engine costs in the context of their fraction of the total equipment purchase price is useful for evaluating the economic impact of the proposed standards. EPA collected quoted retail (list) prices on several equipment pieces to characterize the range of current equipment prices. The combined incremental costs estimated for equipment and engines together for all power ranges are mostly under 2 percent of list prices with the exception of a few low power rated equipment (e.g., a 3 kW centrifugal pump), which may have relatively low sales prices and thus estimated incremental costs that are up to 4 percent of list prices.

Furthermore, as described above in the Engine Cost section, the cost savings below would further reduce the projected cost of the proposed standards. For the long term, EPA has identified two principal factors that would cause the estimated incremental costs to decrease over time. First, since fixed costs are assumed to be recovered over a ten-year period, these costs disappear from the analysis after the first ten model years. Second, as

described further in the Engine Cost section, the analysis incorporates the effects of a learning curve by projecting that the variable costs of making equipment changes to accommodate low-emitting engines decreases by 20 percent starting with the third year of production and by reducing variable costs again by 20 percent starting with the sixth year of production. Table 9 shows the schedule of projected equipment costs for each category of equipment over time, and it also presents the combined costs estimated for equipment and engines together. (The combined engine and equipment costs presented in Table 9 do not include increased operating costs.)

4. Aggregate Costs to Society

The above analysis develops unit cost estimates for each power category. With current data for equipment sales for each category and projections for the future, these costs can be translated into a total projected cost to the nation for the proposed emission standards in any year. Increased purchase prices and operating costs lead to aggregate costs of about $3 million in the first year, increasing to a peak of $320 million in 2008 as increasing numbers of engines become subject to the proposed standards. The following years show declining aggregate costs as the per-unit cost of compliance decreases, as described above, to a low point of about $190 million in 2014. After 2014, stable engine costs applied to a slowly growing market lead to slowly increasing aggregate costs.

Commenters on the Supplemental ANPRM suggested that new nonroad diesel engine standards would negatively impact other entities such as equipment distributors/dealers, ultimate purchasers (e.g., farmers, construction contractors, loggers), and suppliers of parts and services for engines and equipment. In the segment of the economy involving nonroad diesel engines and equipment, distributors/dealers and purchasers are downstream of engine and equipment manufacturers, and suppliers of parts and services are upstream. EPA recognizes that there may be some potential impact on these entities from the proposed rule. For example, as some commenters suggested, were a sudden large increase in equipment prices to occur, it might result in a slowing of purchases of new equipment, possibly causing upstream suppliers or downstream dealers to lose business. As described in Section IV.B.3., EPA estimates that the combined incremental costs for equipment and engines together for all power ranges would generally be under 2 percent of the list prices of equipment. Considering that price changes are already a common occurrence in this market, EPA believes the impacts will be minimal. Also, such small cost increments, together with the complexity of this market, make it extremely difficult to quantitatively analyze the impacts on entities upstream and downstream of engine and equipment makers. Therefore, EPA included in the cost analysis only those entities that are expected to be directly impacted by the proposed rule.

C. Cost-Effectiveness

EPA has estimated the cost-effectiveness (i.e., the cost per ton of emission reduction) of the proposed Tier 1, Tier 2 and Tier 3 standards for the same power categories of nonroad equipment highlighted earlier in this section. Chapter 6 of the Draft RIA contains a more detailed discussion of the cost-effectiveness analysis. EPA requests comments on all aspects of the cost-effectiveness analysis.

As described above in the Economic Impacts section, the projected cost of complying with the proposed standards will vary by power category and model year. Therefore, the cost-effectiveness will also vary from model year to model year. For comparison purposes, the discounted lifetime costs (including increased engine costs, equipment costs and operating costs), emission reductions (in short tons), and cost-effectiveness of the proposed NMHC + NO_X standards are shown in Table 10 for the same model years discussed above in the Economic Impacts section. EPA believes this is a conservative estimate because EPA assumed that all of the increased costs presented earlier were attributable to NMHC+NO_X control and none of the costs were attributed to PM control. NO_X reductions represent approximately 90 percent of the total NMHC+NO_X emission reductions expected from the proposed standards.

TABLE 10.—COST-EFFECTIVENESS OF THE PROPOSED NMHC+NO_X Standards

Standard	Power (kW)	Year of production	Discounted lifetime cost	Discounted lifetime NMHC+NO_X reductions (tons)	Discounted lifetime cost-effectiveness (per ton)
Tier 1 ...	0–37	1	$138	0.32	$440
Tier 2 ...	0–37	1	33	0.04	790
	.....	6	15	.....	360
	37–75	1	235	0.59	400
	75–130	1	458	1.19	390
	130–450	1	446	2.11	210
	450–560	1	1,075	8.11	130
	560	1	1,350	11.44	120
	.....	6	207	.....	20
Tier 3 ...	37–75	1	430	0.62	700
		6	217	.....	350
	75–130	1	573	0.94	610
		6	325	.....	350
	130–450	1	601	1.71	350
		6	356	.....	210
	450–560	1	1,878	6.08	310
		6	522	.....	90

Weighting the projected cost and emission benefit numbers presented above by the populations of the individual power categories, EPA calculated the cost-effectiveness of the proposed NMHC + NO_X standards for the entire nonroad diesel engine fleet. Table 11 contains the resulting fleet-

wide cost-effectiveness results for the Tier 2 and Tier 3 standards.

TABLE 11.—FLEET-WIDE COST-EFFECTIVENESS OF THE PROPOSED NONROAD NMHC + NO_X Standards

Standard	Discounted lifetime cost-effectiveness
Tier 2	$300/ton.
Tier 3—Short term	$400/ton.
Tier 3—Long term	$180/ton.

For comparison to other PM control strategies, EPA has also analyzed the cost-effectiveness of the proposed standards assuming half of the increased costs were attributable to PM control. Such a fleet-wide discounted lifetime cost-effectiveness represents the highest figure that could be expected for cost-effectiveness of the proposed standards and was calculated to provide an indication of the upper bound of PM cost-effectiveness. The resulting fleet-wide discounted lifetime cost-effectiveness of the proposed Tier 1 and Tier 2 PM standards was approximately $1,500 per ton.

In an effort to evaluate the cost-effectiveness of the proposed NMHC + NO_X controls for nonroad engines, EPA has summarized the cost-effectiveness results for three other recent EPA mobile source rulemakings that required reductions in NO_X (or NMHC + NO_X) emissions. The heavy-duty vehicle portion of the Clean Fuel Fleet Vehicle Program yielded a cost-effectiveness of approximately $1,500/ton of NO_X, Phase II of the Reformulated Gasoline Program yielded approximately $5,000/ton of NO_X, and the most recent NMHC + NO_X standards for highway heavy-duty diesel engines yielded a cost-effectiveness of $100–$600/ton of NMHC + NO_X. The cost-effectiveness of the proposed NMHC + NO_X standards for nonroad diesel engines presented above are more favorable than the cost-effectiveness of both the clean fuel fleet vehicle program and reformulated gasoline. The cost-effectiveness of the proposed NMHC + NO_X standards for nonroad diesel engines is comparable to the cost-effectiveness of the most recent NMHC + NO_X standards for heavy-duty highway diesel engines.

EPA has also summarized the cost-effectiveness results for two other recent EPA mobile source rulemakings that required reductions in PM emissions. The cost-effectiveness of the most recent urban bus engine PM standard was estimated to be $10,000–$16,000/ton and the cost-effectiveness of the urban bus retrofit/rebuild program was estimated to be approximately $25,000/ton. The PM cost-effectiveness of the proposed nonroad engine standards presented above are more favorable than either of the urban bus programs.

In addition to the benefits of reducing ozone within and transported into urban ozone nonattainment areas, the NO_X reductions from the proposed nonroad engine standards are expected to have beneficial impacts with respect to crop damage, secondary particulate, acid deposition, eutrophication, visibility, and forests, as described earlier. Because of the difficulty of quantifying the monetary value of these societal benefits, the cost-effectiveness values presented do not assign any numerical value to these additional benefits. However, based on an analysis of existing studies that have estimated the value of such benefits in the past, the Agency believes that the actual monetary value of the multiple environmental and public health benefits that would be produced by large NO_X reductions similar to those projected under this proposal will likely be greater than the estimated compliance costs. EPA requests comment on including these benefits in an estimate of the cost-effectiveness of the proposed standards.

VII. Public Participation

As mentioned above, EPA issued a Supplemental ANPRM releasing the Nonroad Statement of Principles and announcing EPA's intent to formally propose regulatory action relating to nonroad diesel emissions consistent with the Statement of Principles. By the time the comment period closed, the Agency had received more than 20 communications relating to this program and the Supplemental ANPRM. Additional comments have been received as a part of the Agency's special outreach to small entities (see Section VIII.B.). These comments have been very valuable in developing this proposal, and the Agency looks forward to additional comment as the formal rulemaking process now begins. All of these comments are available in the rulemaking docket and many of them are discussed in the context of various issues in this preamble. EPA has considered each of the comments and has attempted to address them in this proposal.

A. Comments and the Public Docket

Publication of this notice opens a formal comment period for this proposal. EPA will accept comments for the period indicated under ''**DATES**'' above. The Agency encourages all parties that have an interest in the program described in this notice to offer comment on all aspects of the action. Throughout this proposal are requests for specific comment on various topics.

The most useful comments are those supported by appropriate and detailed rationales, data, and analyses. The Agency also encourages commenters that disagree with the proposed program to suggest and analyze alternate approaches to meeting the air quality goals of this proposed program. All comments, with the exception of proprietary information, should be directed to the EPA Air Docket Section, Docket No. A–96–40 before the date specified above.

Commenters who wish to submit proprietary information for consideration should clearly separate such information from other comments by: (1) Labeling proprietary information ''Confidential Business Information'' and (2) sending proprietary information directly to the contact person listed (see **FOR FURTHER INFORMATION CONTACT**) and not to the public docket. This will help ensure that proprietary information is not inadvertently placed in the docket. If a commenter wants EPA to use a submission of confidential information as part of the basis for the final rule, then a nonconfidential version of the document that summarizes the key data or information should be sent to the docket.

Information covered by a claim of confidentiality will be disclosed by EPA only to the extent allowed and in accordance with the procedures set forth in 40 CFR part 2. If no claim of confidentiality accompanies the submission when it is received by EPA, it will be made available to the public without further notice to the commenter.

B. Public Hearing

The Agency will hold a public hearing as noted in the **DATES** section above. Any person desiring to present testimony at the public hearing is asked to notify the contact person listed above at least five business days prior to the date of the hearing. This notification should include an estimate of the time required for the presentation of the testimony and any need for audio/visual equipment. EPA suggests that sufficient copies of the statement or material to be presented be available to the audience. In addition, it is helpful if the contact person receives a copy of the testimony or material prior to the hearing.

The hearing will be conducted informally, and technical rules of evidence will not apply. A sign-up sheet will be available at the hearing for scheduling the order of testimony. A written transcript of the hearing will be

prepared. The official record of the hearing will be kept open for 30 days after the hearing to allow submittal of supplementary information.

VIII. Administrative Requirements

A. Administrative Designation and Regulatory Analysis

Under Executive Order 12866, the Agency must determine whether this regulatory action is ''significant'' and therefore subject to Office of Management and Budget (OMB) review and the requirements of the Executive Order (58 FR 51735, Oct. 4, 1993). The order defines ''significant regulatory action'' as any regulatory action that is likely to result in a rule that may:

(1) Have an annual effect on the economy of $100 million or more or adversely affect in a material way the economy, a sector of the economy, productivity, competition, jobs, the environment, public health or safety, or State, local, or tribal governments or communities;

(2) Create a serious inconsistency or otherwise interfere with an action taken or planned by another agency;

(3) Materially alter the budgetary impact of entitlements, grants, user fees, or loan programs or the rights and obligations of recipients thereof; or,

(4) Raise novel legal or policy issues arising out of legal mandates, the President's priorities, or the principles set forth in the Executive Order.

Pursuant to the terms of Executive Order 12866, EPA has determined that this proposal is a ''significant regulatory action'' because the proposed standards and other regulatory provisions, if implemented, would have an annual effect on the economy in excess of $100 million. A Draft RIA has been prepared and is available in the docket associated with this rulemaking. This action was submitted to the Office of Management and Budget (OMB) for review as required by Executive Order 12866. Any written comments from OMB and any EPA response to OMB comments are in the public docket for this proposal.

B. Regulatory Flexibility Act

The Regulatory Flexibility Act was amended by the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA), Public Law 104–121, to ensure that concerns regarding small entities are adequately considered during the development of new regulations that affect them. In response to the provisions of this statute, EPA has identified industries subject to this proposed rule and has provided information to and received comment from small entities and representatives of small entities in these industries. The Agency has also convened a panel under section 609(b) of the Regulatory Flexibility Act as added by SBREFA. The purpose of the Panel is to collect the advice and recommendations of representatives of small entities that will be affected by the rule and to report on those comments and the Panel's findings as to issues related to the key elements of an initial regulatory flexibility analysis under section 603 of the Regulatory Flexibility Act. Those elements of an initial regulatory flexibility analysis are:

- The number of small entities to which the proposed rule will apply.
- Projected reporting, recordkeeping, and other compliance requirements of the proposed rule, including the classes of small entities which will be subject to the requirements and the type of professional skills necessary for preparation of the report or record.
- Other relevant Federal rules which may duplicate, overlap, or conflict with the proposed rule.
- Any significant alternatives to the proposed rule which accomplish the stated objectives of applicable statutes and which minimize any significant economic impact of the proposed rule on small entities.

Once completed, the Panel report is provided to the Agency issuing the proposed rule and included in the rulemaking record. In light of the Panel report, the Agency is to make changes to the proposed rule or the initial regulatory flexibility analysis for the proposed rule, where appropriate.

EPA has prepared an initial regulatory flexibility analysis to analyze the economic impacts of this proposed rule on small companies; the initial regulatory flexibility analysis is found in Chapter 4 of the Draft RIA. EPA's outreach to small entities and EPA's responses to the recommendations of the Panel are described in the initial regulatory flexibility analysis and summarized below. The Agency continues to be interested in the potential impacts of the proposed rule on small entities and welcomes additional comments during the rulemaking process on issues related to such impacts.

1. Applicable Small Businesses

The initial regulatory flexibility analysis analyzes four separate but related industries that will be subject to this proposed rule and that contain small businesses as defined by regulations of the Small Business Administration (SBA): nonroad diesel engine manufacturing, manufacturing of nonroad diesel equipment, post-manufacture marinizing of diesel engines, and the rebuilding or remanufacturing of diesel nonroad engines. According to SBA's regulations (13 CFR 121), businesses with no more than the following numbers of employees or dollars of annual receipts are considered ''small entities'' for purposes of a regulatory flexibility analysis:

- Manufacturers of engines (includes marinizers)—1000 employees.
- Equipment manufacturers
- Manufacturers of construction equipment—750 employees.
- Manufacturers of industrial trucks (forklifts)—750 employees.
- Manufacturers of other nonroad equipment—500 employees.
- Rebuilders/Remanufacturers of engines—$5 million.

2. Small Business Economic Impact Analysis

The initial regulatory flexibility analysis evaluates in detail the financial impacts of the proposed standards on small manufacturers of nonroad diesel equipment. Along with small manufacturers of equipment, the potential impacts on small manufacturers of diesel engines, small marinizers, and small engine rebuilders/remanufacturers were assessed as part of the SBREFA Panel process as discussed below; however, a detailed economic analysis was conducted only for equipment manufacturers, for the following reasons. There is only one small manufacturer of diesel engines affected by the proposed rule that meets the Small Business Administration's (SBA) small business criteria, and this small engine manufacturer would have impacts from the proposal that are similar to those impacts experienced by large nonroad engine manufacturers, which are described in Section VI.B. of this proposal. Marinizers are expected to experience impacts similar to those of nonroad equipment manufacturers since changes made by the original engine manufacturers might require changes in the parts and process involved in marinization. Engine rebuilders/remanufacturers would not be economically impacted by this proposed rule since as described in Section III.C. of this proposal, the proposed provisions for these entities would not require a change to their current practices.

As described in Section IV.B.4., commenters on the Supplemental ANPRM suggested that new nonroad diesel engine standards would negatively impact other small entities such as equipment distributors/dealers, ultimate purchasers, and suppliers of

parts and services for engines and equipment. EPA recognizes that these downstream and upstream small entities may be adversely impacted by the proposed rule. However, for the reasons described in Section IV.B.4., EPA included in the cost analysis and the initial regulatory flexibility analysis only those entities that are expected to be directly impacted by the proposed rule. EPA asks for comments on the potential impacts of the proposed rule on any downstream and upstream small entities, with supporting data or methodologies to assist in analyzing these impacts whenever possible.

The initial regulatory flexibility analysis applies an economic measure known as the ''sales test'' to evaluate the economic impact of the proposed standards on small manufacturers of nonroad diesel equipment. The sales test involves calculation of annualized compliance costs as a function of sales revenue. According to the sales test results in the initial regulatory flexibility analysis, an estimated 9 percent of small equipment manufacturers would be economically impacted by greater than 1 percent by the proposed rule. Also, an estimated 5 percent of small equipment manufacturers would experience an impact greater than 3 percent.

As described in Section III.E. of this proposal, this proposed rule includes flexibility provisions for equipment manufacturers (both large and small manufacturers). As shown in the initial regulatory flexibility analysis, the flexibility provisions should reduce any economic impacts of the proposed regulations on small equipment manufacturers. However, the effects of the provisions are likely conservatively estimated because the hardship relief provisions described in Section III.E. were not included in the analysis. EPA considers the flexibility provisions to be a significant regulatory alternative since they meet the Agency's air quality objectives while minimizing significant economic impacts on small equipment manufacturers.

3. SBREFA Panel and Other Regulatory Alternatives

Consistent with SBREFA, EPA convened a Small Business Advocacy Review Panel on March 25, 1997 to collect the advice and recommendations of representatives of small entities that may be affected by the proposed rule and to report on those comments. The Panel, consisting of representatives of the Small Business Administration, the Office of Management and Budget, and EPA, issued a report on May 23, 1997.[43]

Accordingly, during the development of this proposal, EPA and the SBREFA Panel were in contact with representatives of small nonroad diesel equipment manufacturers, small nonroad diesel engine manufacturers, small nonroad engine rebuilders/remanufacturers, and small post-manufacture engine marinizers. In its final report, the SBREFA Panel encouraged EPA to continue to seek information and conduct analysis relating the number of small entities potentially affected by this proposed rule. The Panel also encouraged EPA to consider the potential overlap with Occupational Safety and Health Administration (OSHA) regulations related to ambient CO levels and to design the rule to minimize the need for record keeping and reporting. The Agency requests additional information, comments, and suggestions on the number of small entities and the potential overlap with OSHA CO limits in response to this proposal. Proposed measures to minimize record keeping and reporting are discussed in Section III.E. of this proposal.

In addition, the Panel believed that a set of five alternatives to the provisions outlined in the Supplemental ANPRM, considered as an integrated package, would provide significant flexibility and burden reduction for small entities subject to the proposed rule. The Panel believed that EPA should consider conducting further analysis on these five alternatives and proposing or soliciting comment on them in this proposal. It is important to note that the Panel's findings are based on the information available at the time the Panel report was drafted. The Panel makes its report at an early stage of the process of promulgating a rule and its report should be considered in that light.

EPA is proposing or soliciting comment in this proposal on the five regulatory alternatives, based on EPA's analysis and agreement with the Panel's findings (see Section III.E.). These alternatives meet the Agency's air quality objectives while maximizing the compliance flexibility for small manufacturers of nonroad equipment and small marinizers. A more detailed discussion on EPA's outreach and these significant regulatory alternatives is provided in the initial regulatory flexibility analysis (found in Chapter 4 of the Draft RIA) and in Section III.E. of this proposal.

[43] ''Final Report of the SBREFA Small Business Advocacy Review Panel for Control of Emissions of Air Pollution from Nonroad Diesel Engines'', May 23, 1997 (available in Air Docket A–96–40).

C. Paperwork Reduction Act

The information collection requirements in this proposed rule have been submitted for approval to the Office of Management and Budget (OMB) under the Paperwork Reduction Act, 44 U.S.C. 3501 *et seq.* A copy of any of the submitted Information Collection Requests (ICR) documents may be obtained from Sandy Farmer, Regulatory Information Division, U.S. Environmental Protection Agency (2136); 401 M St., S.W.; Washington, DC 20460 or by calling (202) 260–2740. The following ICR documents have been prepared by EPA:

EPA ICR #	Title
0011.09	Selective Enforcement Auditing and recordkeeping requirements for on-highway HDE, nonroad compression ignition engines, and on-highway light-duty vehicles and light duty trucks.
0095.10	Pre-certification and testing exemption reporting and record-keeping requirements.
0282.10	Emission Defect Information and Voluntary Emission recall reports.
1684.04	Compression ignition non-road engine certification application.
1695.03	Amendment to the Information Collection Request Emission Standards for New Nonroad Spark-Ignition Engines.
1826.01	Information Collection for Equipment Manufacturer Flexibility.

The Agency proposes to collect information related to certification results, durability, maintenance, and averaging, banking and trading. This information will be used to ensure compliance with and enforce the provisions in this rule. Section 208(a) of the Clean Air Act requires that manufacturers provide information the Administrator may reasonably require to determine compliance with the regulations; submission of the information is therefore mandatory. EPA will consider confidential all information meeting the requirements of § 208(c) of the Clean Air Act.

These collections of information have an estimated annual burden averaging 3100 hours annually for a typical engine manufacturer. The estimated likely respondents is 58 with annual operational and maintenance costs of $195,000. However, the hours and annual cost of information collection activities by a given manufacturer depends on manufacturer-specific variables, such as the number of engine

families, production changes, emissions defects, and so forth. Burden means the total time, effort, or financial resources expended by persons to generate, maintain, retain, or disclose or provide information to or for a federal agency. This includes the time needed to review instructions; develop, acquire, install, and utilize technology and systems for the purposes of collecting, validating, and verifying information, processing and maintaining information, and disclosing and providing information; adjust the existing ways to comply with any previously applicable instructions and requirements; train personnel to be able to respond to a collection of information; and transmit or otherwise disclose the information.

An agency may not conduct or sponsor, and a person is not required to respond to a collection of information unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations are listed in 40 CFR part 9 and 48 CFR chapter 15.

Comments are requested on the Agency's need for this information, the accuracy of the provided burden estimates, and any suggested methods for minimizing respondent burden, including through the use of automated collection techniques. Send comments on the ICR to the Director, OPPE Regulatory Information Division; U.S. Environmental Protection Agency (2136); 401 M St., S.W.; Washington, DC 20460; and to the Office of Information and Regulatory Affairs, Office of Management and Budget, 725 17th St., N.W., Washington, DC 20503, marked ''Attention: Desk Officer for EPA.'' Include the ICR number in any correspondence. Since OMB is required to make a decision concerning the ICR between 30 and 60 days after publication in the **Federal Register**, a comment to OMB is best assured of having its full effect if OMB receives it within 30 days after publication in the **Federal Register**. The final rule will respond to any OMB or public comments on the information collection requirements contained in this proposal.

D. Unfunded Mandates Reform Act

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA), Public Law 104–4, establishes requirements for federal agencies to assess the effects of their regulatory actions on state, local, and tribal governments and the private sector. Under section 202 of the UMRA, EPA generally must prepare a written statement, including a cost-benefit analysis, for proposed and final rules with ''federal mandates'' that may result in expenditures to state, local, and tribal governments, in the aggregate, or to the private sector, of $100 million or more for any one year. Before promulgating an EPA rule for which a written statement is needed, section 205 of the UMRA generally requires EPA to identify and consider a reasonable number of regulatory alternatives and adopt the least costly, most cost-effective, or least burdensome alternative that achieves the objectives of the rule. The provisions of section 205 do not apply when they are inconsistent with applicable law. Moreover, section 205 allows EPA to adopt an alternative other than the least costly, most cost-effective, or least burdensome alternative if the Administrator publishes with the final rule an explanation of why that alternative was not adopted. Before EPA establishes any regulatory requirements that may significantly or uniquely affect small governments, including tribal governments, it must have developed under section 203 of the UMRA a small government agency plan. The plan must provide for notifying potentially affected small governments, enabling officials of affected small governments to have meaningful and timely input in the development of EPA regulatory proposals with significant federal intergovernmental mandates, and informing, educating, and advising small governments on compliance with the regulatory requirements.

This proposed rule contains no federal mandates (under the regulatory provisions of Title II of the UMRA) for state, local, or tribal governments. The rule imposes no enforceable duties on any of these governmental entities. Nothing in the proposed program would significantly or uniquely affect small governments. EPA has determined that this rule contains federal mandates that may result in expenditures of $100 million or more in any one year for the private sector. EPA believes that the proposed program represents the least costly, most cost-effective approach to achieving the air quality goals of the proposed rule. The cost-benefit analysis required by UMRA is contained in the RIA. The reader is directed to Section VIII.A. above, Administrative Designation and Regulatory Analysis, for further information regarding these analyses.

IX. Statutory Authority

In accordance with section 213(a) of the Clean Air Act, 42 U.S.C. 7547(a), EPA conducted a study of emissions from nonroad engines, vehicles, and equipment in 1991. Based on the results of that study, EPA determined that emissions of NO_X, VOCs (including HC), and CO from nonroad engines and equipment contribute significantly to ozone and CO concentrations in more than one nonattainment area (see 59 FR 31306, June 17, 1994). Given this determination, section 213(a)(3) of the Act requires EPA to promulgate (and from time to time revise) emissions standards for those classes or categories of new nonroad engines, vehicles, and equipment that in EPA's judgment cause or contribute to such air pollution. EPA has determined that the engines that would be regulated under this proposal ''cause or contribute'' to such air pollution. (See the June 1994 final rule and Section II.A.3. above).

Where EPA determines that other emissions from new nonroad engines, vehicles, or equipment significantly contribute to air pollution that may reasonably be anticipated to endanger public health or welfare, section 213(a)(4) authorizes EPA to establish (and from time to time revise) emission standards from those classes or categories of new nonroad engines, vehicles, and equipment that EPA determines cause or contribute to such air pollution. In the June 1994 final rule, EPA made this determination for missions of PM and smoke from nonroad engines in general and for CI nonroad engines rated over 37 kW. With this document, EPA is making the same findings for nonroad diesel engines rated under 37 kW. (See Section II.A.3. above).

List of Subjects

40 CFR Part 9

Reporting and recordkeeping requirements.

40 CFR Part 86

Administrative practice and procedure, Confidential business information, Labeling, Motor vehicle engine pollution, Reporting and recordkeeping requirements.

40 CFR Part 89

Environmental protection, Administrative practice and procedure, Air pollution control, Diesel fuel, Motor vehicles, Motor vehicle pollution, Reporting and recordkeeping requirements, Research.

Dated: August 29, 1997.

Carol M. Browner,

Administrator.

For the reasons set out in the preamble, title 40, chapter I, parts 9, 86, and 89 of the Code of Federal Regulations are proposed to be amended as set forth below.

PART 9—[AMENDED]

1. The authority citation for part 9 continues to read as follows:

Authority: 7 U.S.C. 135 *et seq.*, 136–136y; 15 U.S.C. 2001, 2003, 2005, 2006, 2601–2671; 21 U.S.C. 331j, 346a, 348; 31 U.S.C. 9701; 33 U.S.C. 1251 *et seq.*, 1311, 1313d, 1314, 1321, 1326, 1330, 1344, 1345 (d) and (e), 1361; E.O. 11735, 38 FR 21243, 3 CFR, 1971–1975 Comp. p. 973; 42 U.S.C. 241, 242b, 243, 246, 300f, 300g, 300g–1, 300g–2, 300g–3, 300g–4, 300g–5, 300g–6, 300j–1, 300j–2, 300j–3, 300j–4, 300j–9, 1857 *et seq.*, 6901–6992k, 7401–7671q, 7542, 9601–9657, 11023, 11048.

2. Section 9.1 is amended in the table by removing the center heading ''Control of Emissions From New and In-Use Nonroad Engines'' and the entries under that center heading and adding a new center heading and entries in numerical order to read as follows:

§ 9.1 OMB approvals under the Paperwork Reduction Act.

* * * * *

40 CFR citation	OMB control No.
* * * * *	
Control of Emissions From New and In-Use Compression-Ignition Nonroad Engines	
89.1	2060–0124
89.2	2060–0124
89.114–89.120	2060–0104
89.122–89.127	2060–0104
89.129	2060–0104
89.203–89.207	2060–0104
89.209—89.211	2060–0104
89.304–89.331	2060–0104
89.404–89.424	2060–0104
89.505–89.510	2060–0064
89.511–89.512	2060–0064
89.603–89.605	2060–0095
89.607–89.610	2060–0095
89.611	2060–0007 2060–0095
89.612	2060–0095
89.801–89.803	2060–0048
89.903	2060–0124
89.905–89.911	2060–0007
* * * * *	

PART 86—CONTROL OF EMISSIONS FROM NEW AND IN-USE HIGHWAY VEHICLES AND ENGINES

3. The heading of part 86 is revised as set forth above.

4. The authority citation for part 86 continues to read as follows:

Authority: 42 U.S.C. 7401–7671q.

5. Section 86.884–8 as amended at 62 FR 47122 effective January 5, 1998, is amended by revising the table in paragraph (c)(4) to read as follows:

§ 86.884–8 Dynamometer and engine equipment.

* * * * *

(c) * * *

(4) * * *

Maximum rated horsepower	Exhaust pipe diameter (inches)
HP≤50	1.5
50≤HP<100	2.0
100≤HP<200	3.0
200≤HP<300	4.0
300≤HP<500	5.0
HP≥500	6.0

* * * * *

PART 89—CONTROL OF EMISSIONS FROM NEW AND IN-USE COMPRESSION-IGNITION NONROAD ENGINES

6. The heading of part 89 is revised as set forth above.

7. The authority citation for part 89 continues to read as follows:

Authority: Sections 202, 203, 204, 205, 206, 207, 208, 209, 213, 215, 216, and 301(a) of the Clean Air Act, as amended (42 U.S.C. 7521, 7522, 7523, 7524, 7525, 7541, 7542, 7543, 7547, 7549, 7550, and 7601(a)).

8. The following sections are redesignated as set forth in the following table:

Old designation	New designation
89.101–96	89.101
89.102–96	89.102
89.103–96	89.103
89.104–96	89.104
89.105–96	89.105
89.106–96	89.106
89.107–96	89.107
89.108–96	89.108
89.109–96	89.109
89.110–96	89.110
89.111–96	89.111
89.112–96	89.112
89.113–96	89.113
89.114–96	89.114
89.115–96	89.115
89.116–96	89.116
89.117–96	89.117
89.118–96	89.118
89.119–96	89.119
89.120–96	89.120
89.121–96	89.121
89.122–96	89.122
89.123–96	89.123
89.124–96	89.124
89.125–96	89.125
89.126–96	89.126
89.127–96	89.127
89.128–96	89.128
89.129–96	89.129
89.201–96	89.201
89.202–96	89.202
89.203–96	89.203
89.204–96	89.204
89.205–96	89.205
89.206–96	89.206
89.207–96	89.207
89.208–96	89.208
89.209–96	89.209
89.210–96	89.210
89.211–96	89.211
89.212–96	89.212
89.301–96	89.301
89.302–96	89.302
89.303–96	89.303
89.304–96	89.304
89.305–96	89.305
89.306–96	89.306
89.307–96	89.307
89.308–96	89.308
89.309–96	89.309
89.310–96	89.310
89.311–96	89.311
89.312–96	89.312
89.313–96	89.313
89.314–96	89.314
89.315–96	89.315
89.316–96	89.316
89.317–96	89.317
89.318–96	89.318
89.319–96	89.319
89.320–96	89.320
89.321–96	89.321
89.322–96	89.322
89.323–96	89.323
89.324–96	89.324
89.325–96	89.325
89.326–96	89.326
89.327–96	89.327
89.328–96	89.328
89.329–96	89.329
89.330–96	89.330
89.331–96	89.331
89.401–96	89.401
89.402–96	89.402
89.403–96	89.403
89.404–96	89.404
89.405–96	89.405
89.406–96	89.406
89.407–96	89.407
89.408–96	89.408
89.409–96	89.409
89.410–96	89.410
89.411–96	89.411
89.412–96	89.412
89.413–96	89.413
89.414–96	89.414
89.415–96	89.415
89.416–96	89.416
89.417–96	89.417
89.418–96	89.418
89.419–96	89.419
89.420–96	89.420
89.421–96	89.421
89.422–96	89.422
89.423–96	89.423
89.424–96	89.424
89.425–96	89.425
89.501–96	89.501
89.502–96	89.502
89.503–96	89.503
89.504–96	89.504
89.505–96	89.505
89.506–96	89.506
89.507–96	89.507
89.508–96	89.508
89.509–96	89.509
89.510–96	89.510
89.511–96	89.511
89.512–96	89.512

Old designation	New designation
89.513–96	89.513
89.514–96	89.514
89.515–96	89.515
89.516–96	89.516
89.601–96	89.601
89.602–96	89.602
89.603–96	89.603
89.604–96	89.604
89.605–96	89.605
89.606–96	89.606
89.607–96	89.607
89.608–96	89.608
89.609–96	89.609
89.610–96	89.610
89.611–96	89.611
89.612–96	89.612
89.613–96	89.613

9. In part 89, all internal section references are revised as indicated in the above redesignation table.

Subpart A—[Amended]

10. Section 89.1 is amended by revising paragraphs (a) and (b)(4) to read as follows:

§ 89.1 Applicability.

(a) This part applies to nonroad compression-ignition engines.

(b) * * *

(4) Engines used in marine vessels as defined in the General Provisions of the United States Code, 1 U.S.C. 3 , if those engines have a rated power at or above 37 kW.

11. Section 89.2 is amended by adding new definitions in alphabetical order to read as follows:

§ 89.2 Definitions.

* * * * *

Auxiliary marine diesel engine means a marine diesel engine that is not a propulsion marine diesel engine.

Blue Sky Series engine means a low-emitting nonroad engine meeting the requirements of § 89.112(f).

* * * * *

Compression-ignition engine means an engine with operating characteristics significantly similar to the theoretical Diesel combustion cycle. The non-use of a throttle during normal operation is indicative of a compression-ignition engine.

Constant-speed engine means an engine that is governed to operate only at rated speed.

Crankcase emissions means airborne substances emitted to the atmosphere from any portion of the engine crankcase ventilation or lubrication systems.

* * * * *

Farm equipment or vehicle has the meaning contained in 40 CFR part 85, subpart Q.

Full load governed speed is the maximum full load speed as specified by the manufacturer in the sales and service literature and certification application. This speed is the highest engine speed with an advertised power greater than zero.

* * * * *

Intermediate speed means peak torque speed if peak torque speed occurs from 60 to 75 percent of rated speed. If peak torque speed is less than 60 percent of rated speed, intermediate speed means 60 percent of rated speed. If peak torque speed is greater than 75 percent of rated speed, intermediate speed means 75 percent of rated speed.

* * * * *

Marine diesel engine means a compression-ignition engine that is intended to be installed on a vessel.

* * * * *

Post-manufacture marinizer means a person who produces a marine diesel engine by substantially modifying a certified or uncertified complete or partially complete engine; and is not controlled by the manufacturer of the base engine or by an entity that also controls the manufacturer of the base engine. For the purpose of this definition, ''substantially modify'' means changing an engine in a way that could change engine emission characteristics.

* * * * *

Propulsion marine diesel engine means a marine diesel engine that is intended to move a vessel through the water or direct the movement of a vessel.

Rated speed is the maximum full load governed speed for governed engines and the speed of maximum horsepower for ungoverned engines.

Specific emissions means emissions expressed on the basis of observed brake power, using units of g/kW-hr. Observed brake power measurement includes accessories on the engine if these accessories are required for running an emission test (except for the cooling fan). When it is not possible to test the engine in the gross conditions, for example, if the engine and transmission form a single integral unit, the engine may be tested in the net condition. Power corrections from net to gross conditions will be allowed with prior approval of the Administrator.

* * * * *

Tier 1 engine means an engine subject to the Tier 1 emission standards listed in § 89.112(a).

Tier 2 engine means an engine subject to the Tier 2 emission standards listed in § 89.112(a).

Tier 3 engine means an engine subject to the Tier 3 emission standards listed in § 89.112(a).

* * * * *

U.S.-directed production volume means the number of nonroad equipment or vehicles units produced by a manufacturer for which the manufacturer has reasonable assurance that sale was or will be made to ultimate purchasers in the United States.

* * * * *

Vessel has the meaning given to it in 1 U.S.C. 3.

12. Section 89.3 is amended by adding new acronyms in alphabetical order to read as follows:

§ 89.3 Acronyms and abbreviations.

* * * * *

EGR Exhaust gas recirculation

* * * * *

NMHC Nonmethane hydrocarbon

* * * * *

PM Particulate matter

* * * * *

§ 89.4 [Removed and reserved]

13. Remove and reserve § 89.4.

14. Section 89.6 is amended in paragraph (b)(1) by removing the last entry in the table and adding a new entry in its place and in paragraph (b)(2) by adding in alpha-numeric order a new entry to the table to read as follows:

§ 89.6 Reference materials.

* * * * *

(b) * * *

(1) * * *

Document No. and name	40 CFR part 89 reference
* * * * *	
ASTM E29–93a: ''Standard Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications''	89.120; 89.207; 89.509

(2) * * *

Document number and name	40 CFR part 89 reference
* * * * *	
SAE J1151 December 1991: ''Methane Measurement Using Gas Chromatography''	89.309

* * * * *

Subpart B—[Amended]

15. The newly designated § 89.102 is amended by revising paragraph (a) and

adding new paragraphs (c), (d), (e), (f), and (g) to read as follows:

§ 89.102 Effective dates, optional inclusion.

(a) This subpart applies to all engines described in § 89.101 with the following power rating and manufactured after the following dates:

(1) Less than 19 kW and manufactured on or after January 1, 2000;

(2) Greater than or equal to 19 kW but less than 37 kW and manufactured on or after January 1, 1999;

(3) Greater than or equal to 37 kW but less than 75 kW and manufactured on or after January 1, 1998;

(4) Greater than or equal to 75 kW but less than 130 kW and manufactured on or after January 1, 1997;

(5) Greater than or equal to 130 kW but less than 560 kW and manufactured on or after January 1, 1996;

(6) Greater than or equal to 560 kW and manufactured on or after January 1, 2000.

* * * * *

(c) Engines meeting the voluntary standards described in § 89.112(f) may be designated as Blue Sky Series engines through the 2004 model year.

(d) *Implementation flexibility for equipment and vehicle manufacturers.* Nonroad equipment and vehicle manufacturers and may take any of the otherwise prohibited actions identified in § 89.1003(a)(1) with respect to the following nonroad equipment and vehicles, subject to the requirements of paragraph (e) of this section. The following allowances apply separately to each engine power category subject to standards under § 89.112:

(1) *Percent-of-production allowances*—(i) *Farm equipment or vehicles at or above 37 kW.* For farm equipment or vehicles with engines rated at or above 37 kW, a manufacturer may take any of the actions identified in § 89.1003(a)(1) [Alternative 1: for up to 30 percent of its U.S.-directed production volume of such equipment and vehicles in the first year that Tier 2 engine standards apply to such engines, and for up to 15 percent of its U.S.-directed production volume in each of the seven years following the first year,] [Alternative 2: for a portion of its U.S.-directed production volume of such equipment and vehicles during the eight years immediately following the date on which Tier 2 engine standards first apply to engines used in such equipment and vehicles, provided that the eight-year sum of these portions in each year, as expressed as a percentage for each year, does not exceed 135, and] provided that all such equipment and vehicles or equipment must contain Tier 1 engines;

(ii) *Farm equipment or vehicles rated under 37 kW.* For farm equipment or vehicles with engines rated under 37 kW, a manufacturer may take any of the actions identified in § 89.1003(a)(1) [Alternative 1: for up to 30 percent of its U.S.-directed production volume of such equipment and vehicles in the first year that Tier 1 engine standards apply to such engines, and for up to 15 percent of its U.S.-directed production volume in each of the three [seven] years following the first year] [Alternative 2: for a portion of its U.S.-directed production volume of such equipment and vehicles during the four [eight] years immediately following the date on which Tier 1 engine standards first apply to engines used in such equipment and vehicles, provided that the four[eight]-year sum of these portions in each year, as expressed as a percentage for each year, does not exceed 75 [135]];

(iii) *Other equipment rated at or above 37 kW.* For all other nonroad equipment and vehicles with engines rated at or above 37 kW, a manufacturer may take any of the actions identified in § 89.1003(a)(1) [Alternative 1: for up to 15 percent of its U.S.-directed production volume of such equipment and vehicles in the first year that Tier 2 engine standards apply to such engines, and for up to 5 percent of its U.S.-directed production volume in each of the six years following the first year,] [Alternative 2: for a portion of its U.S.-directed production volume of such equipment and vehicles during the seven years immediately following the date on which Tier 2 engine standards first apply to engines used in such equipment and vehicles, provided that the seven-year sum of these portions in each year, as expressed as a percentage for each year, does not exceed 45, and] provided that all such equipment and vehicles or equipment must contain Tier 1 engines;

(iv) *Other equipment rated under 37 kW.* For all other nonroad equipment and vehicles with engines rated under 37 kW, a manufacturer may take any of the actions identified in § 89.1003(a)(1) [Alternative 1: for up to 15 percent of its U.S.-directed production volume of such equipment and vehicles in the first year that Tier 1 engine standards apply to such engines, and for up to 5 percent of its U.S.-directed production volume in each of the three [six] years following the first year][Alternative 2: for a portion of its U.S.-directed production volume of such equipment and vehicles during the four [seven] years immediately following the date on which Tier 1 engine standards first apply to engines used in such equipment and vehicles, provided that the four[seven]-year sum of these portions in each year, as expressed as a percentage for each year, does not exceed 30 [45]].

(2) *Small volume allowances.* A nonroad equipment or vehicle manufacturer may exceed the production percentages in paragraph (d)(1) of this section in any of the years for which these percentages apply, provided that in each regulated power category, the manufacturer's excepted equipment and vehicles in that year does not exceed 100 units[, and is limited to a single equipment or vehicle model].

Potential Alternative for Paragraph (d)(2)

(d)(2) *Small volume allowances.* A nonroad equipment or vehicle manufacturer may exceed the production percentages in paragraph (d)(1) of this section, provided that in each regulated power category, the manufacturer's total of excepted equipment and vehicles over the years in which the percent-of-production allowance applies does not exceed 100 units times the number of years in which the percent-of-production allowance applies[, and is limited to a single equipment or vehicle model].

(3) Emission credit-derived allowances. A nonroad equipment or vehicle manufacturer may exceed the allowances in paragraphs (d)(1) and (d)(2) of this section in any of the years for which these allowances apply, by retiring sufficient NMHC + NO_X and PM emission credits obtained under the provisions of subpart C of this part. Equipment or vehicles for which these emission credit-derived allowances are used shall be excluded from the determinations required in paragraph (e) of this section.

(i) The amount of emission credits, in megagrams, to be retired for each additional allowance shall be determined separately for NMHC + NO_X and for PM as follows:

Emission credits = [(Previous level)—(New level)] × (Category PR) × (UL) × (10^{-6})

Where:

Previous level = 10.5 g/kW-hr NMHC + NO_X and 0.54 g/kW-hr PM if the equipment for which the allowance is being used has an engine rated at or above 37 kW, or 16.0 g/kW-hr NMHC + NO_X and 1.2 g/kW-hr for PM if the equipment for which the allowance is being used has an engine rated under 37 kW.

New level = The emission standard that would apply to the engine used in the equipment if no allowance were to be used.

Category PR = The midpoint of the power range in § 89.112 applying to the engine used in the equipment for which the allowance is being used.

UL = The useful life for the engine family, in hours.

(ii) A nonroad equipment or vehicle manufacturer choosing to retire emission credits must submit an end-of-the-year report in accordance with the requirements of § 89.211 in each year that credits are retired.

(4) *Inclusion of previous-tier engines.* Equipment and vehicles built with previous tier or noncertified engines under the existing inventory provisions of § 89.1003(b)(4) need not be included in determining compliance with paragraphs (d)(1), (d)(2), and (d)(3) of this section, at the manufacturer's option.

(e) *Determination of compliance and recordkeeping.* The following shall apply to nonroad equipment or vehicle manufacturers who produce excepted equipment or vehicles under the provisions of paragraph (d) of this section:

(1) After each year in which excepted equipment or vehicles are produced, a determination of compliance with the requirements of paragraph (d) of this section shall be made. This determination shall be based on actual production information from the subject year and shall be made within 3 months after the availability of such information. Should any such determination reveal that a production percentage allowance (or small volume allowance where applied) for a power category has been exceeded for the subject year, the nonroad equipment or vehicle manufacturer shall adjust that category's percentage allowance and small volume allowance for the year after the subject year. The percentage allowance shall be recalculated by subtracting the excess percentage of excepted machines from the percentage allowance that would otherwise apply in the year after the subject year (from zero in the year after the final year of the allowance). The small volume allowance shall be recalculated by subtracting the excess number of excepted machines in the subject year from 100 (from zero in the year after the final year of the allowance). If both the recalculated percentage allowance and the recalculated small volume allowance for the year after the subject year is less than zero in any power category, then the manufacturer is in violation of section 203 of the Act and § 89.1003.

Potential Alternative for Paragraph (e)(1)

(e)(1) For each power category in which excepted equipment or vehicles are produced, a determination of compliance with the requirements of paragraph (d) of this section shall be made. This determination shall be made no later than December 31 of the year following the last year in which allowances apply, and shall be based on actual production information from the subject years. Should any such determination reveal that both the percentage allowance and the small volume allowance have been exceeded, then the manufacturer is in violation of section 203 of the Act and § 89.1003.

(2) A nonroad equipment or vehicle manufacturer shall keep records of all equipment and vehicles excepted under the provisions of paragraph (d) of this section, for each power category in which exceptions are taken. These records shall include equipment and engine model numbers, serial numbers, and dates of manufacture, and engine rated power. In addition, the manufacturer shall keep records sufficient to demonstrate the determinations of compliance required in paragraph (e)(1) of this section. All such records shall be kept until at least two full years after the final year in which exceptions are available for each power category.

(f) Hardship relief. Nonroad equipment and vehicle manufacturers, and post-manufacture marinizers, that qualify as small entities under 13 CFR part 121 may take any of the otherwise prohibited actions identified in § 89.1003(a)(1) beyond those allowed under paragraph (d) of this section, subject to approval by the Administrator and the following requirements:

(1) Application for relief must be submitted to the Engine Programs and Compliance Division of the EPA in writing prior to the earliest date in which the applying manufacturer would be in violation of § 89.1003.

(2) Evidence must be provided that the conditions causing the impending violation are not substantially the fault of the applying manufacturer.

(3) Evidence must be provided that the applying manufacturer may be forced to permanently close or sell its equipment-producing operation if relief is not granted.

(4) Any relief granted must begin within one year after the implementation date of the standard applying to engines being used in the equipment for which relief is requested, and may not exceed one year in duration.

(g) *Allowance for the production of engines.* Engine manufacturers may take any of the otherwise prohibited actions identified in § 89.1003(a)(1) with regard to uncertified engines or Tier 1 engines, as appropriate, if the engine manufacturer has received written assurance that the engine is required to meet the demand for engines created under paragraphs (d) and (f) of this section.

16. The newly designated § 89.104 is amended by revising paragraphs (a), (b), and (c) to read as follows:

§ 89.104 Useful life, recall, and warranty periods.

(a) The useful life is based on the rated power and rated speed of the engine.

(1) For all engines rated under 19 kW, and for constant speed engines rated under 37 kW rated speeds greater than or equal to 3,000 rpm, the useful life is a period of 3,000 hours or five years of use, whichever first occurs.

(2) For all other engines rated at or above 19 kW and under 37 kW, the useful life is a period of 5,000 hours or seven years of use, whichever first occurs.

(3) For all engines rated at or above 37 kW, the useful life is a period of 8,000 hours of operation or ten years of use, whichever first occurs.

(b) Engines are subject to recall testing for a period based on the rated power and rated speed of the engines. However, in a recall, engines in the subject class or category would be subject to recall regardless of actual years or hours of operation.

(1) For all engines rated under 19 kW and for constant speed engines rated under 37 kW with rated speeds greater than or equal to 3,000 rpm, the engines are subject to recall testing for a period of 2,250 hours or four years of use, whichever first occurs.

(2) For all other engines rated at or above 19 kW and under 37 kW, the engines are subject to recall for a period of 3,750 hours or five years of use, whichever first occurs.

(3) For all engines rated at or above 37 kW, the engines are subject to recall for a period of 6,000 hours of operation or seven years of use, whichever first occurs.

(c) Warranties imposed by the Clean Air Act for engines rated under 19 kW

are for 1,500 hours of operation or three years of use, whichever first occurs. For engines rated at or above 19 kW, warranties imposed by the Clean Air Act are for 3,000 hours of operation or five years of use, whichever first occurs.

* * * * *

17. The newly designated § 89.109 is revised to read as follows:

§ 89.109 Maintenance instructions and minimum allowable maintenance intervals.

(a) The manufacturer must furnish or cause to be furnished to the ultimate purchaser of each new nonroad engine written instructions for the maintenance needed to ensure proper functioning of the emission control system. Paragraphs (b) through (g) of this section do not apply to Tier 1 engines with rated power at or above 37 kW.

(b) Maintenance performed on equipment, engines, subsystems or components used to determine exhaust emission deterioration factors is classified as either emission-related or nonemission-related and each of these can be classified as either scheduled or unscheduled. Further, some emission-related maintenance is also classified as critical emission-related maintenance.

(c) This paragraph (c) specifies emission-related scheduled maintenance for purposes of obtaining durability data and for inclusion in maintenance instructions furnished to purchasers of new nonroad engines. The maintenance intervals specified below are minimum intervals:

(1) All emission-related scheduled maintenance for purposes of obtaining durability data must occur at the same hours of use intervals that will be specified in the manufacturer's maintenance instructions furnished to the ultimate purchaser of the engine under paragraph (a) of this section. This maintenance schedule may be updated as necessary throughout the testing of the engine, provided that no maintenance operation is deleted from the maintenance schedule after the operation has been performed on the test vehicle or engine.

(2) Any emission-related maintenance which is performed on vehicles, engines, subsystems, or components must be technologically necessary to assure in-use compliance with the emission standards. The manufacturer must submit data which demonstrate to the Administrator that all of the emission-related scheduled maintenance which is to be performed is technologically necessary. Scheduled maintenance must be approved by the Administrator prior to being performed or being included in the maintenance instructions provided to the purchasers under paragraph (a) of this section. The Administrator has determined that emission-related maintenance in addition to or at shorter intervals than those outlined in paragraphs (c)(3) and (c)(4) of this section is not technologically necessary to ensure in-use compliance and therefore will not be accepted. However, the Administrator may determine that maintenance even more restrictive (e.g., longer intervals) than that listed in paragraphs (c)(3) and (c)(4) of this section is also not technologically necessary.

(3) For nonroad compression-ignition engines, the adjustment, cleaning, repair, or replacement listed in paragraphs (c)(3)(i) through (c)(3)(iii) of this section shall occur at 1,500 hours of use and at 1,500-hour intervals thereafter.

(i) Exhaust gas recirculation system-related filters and coolers.

(ii) Positive crankcase ventilation valve.

(iii) Fuel injector tips (cleaning only).

(4) The adjustment, cleaning and repair in paragraphs (c)(4)(i) through (c)(4)(vii) of this section shall occur at 3,000 hours of use and at 3,000-hour intervals thereafter for nonroad compression-ignition engines rated under 130 kW, or at 4,500-hour intervals thereafter for nonroad compression-ignition engines rated at or above 130 kW.

(i) Fuel injectors.

(ii) Turbocharger.

(iii) Electronic engine control unit and its associated sensors and actuators.

(iv) Particulate trap or trap-oxidizer system (including related components).

(v) Exhaust gas recirculation system (including all related control valves and tubing) except as otherwise provided in paragraph (c)(3)(i) of this section.

(vi) Catalytic convertor.

(vii) Any other add-on emission-related component (i.e., a component whose sole or primary purpose is to reduce emissions or whose failure will significantly degrade emission control and whose function is not integral to the design and performance of the engine).

(5)(i) The components listed in paragraphs (c)(5)(i)(A) through (c)(5)(i)(F) of this section are currently defined as critical emission-related components.

(A) Catalytic convertor.

(B) Electronic engine control unit and its associated sensors and actuators.

(C) Exhaust gas recirculation system (including all related filters, coolers, control valves, and tubing).

(D) Positive crankcase ventilation valve.

(E) Particulate trap or trap-oxidizer system.

(F) Any other add-on emission-related component (i.e., a component whose sole or primary purpose is to reduce emissions or whose failure will significantly degrade emission control and whose function is not integral to the design and performance of the engine).

(ii) All critical emission-related scheduled maintenance must have a reasonable likelihood of being performed in-use. The manufacturer shall be required to show the reasonable likelihood of such maintenance being performed in-use. Critical emission-related scheduled maintenance items which satisfy one of the conditions defined in paragraphs (c)(5)(ii)(A) through (c)(5)(ii)(F) of this section will be accepted as having a reasonable likelihood of the maintenance item being performed in-use.

(A) Data are presented which establish for the Administrator a connection between emissions and vehicle performance such that as emissions increase due to lack of maintenance, vehicle performance will simultaneously deteriorate to a point unacceptable for typical driving.

(B) Survey data are submitted which adequately demonstrate to the Administrator that, at an 80 percent confidence level, 80 percent of such engines already have this critical maintenance item performed in-use at the recommended interval(s).

(C) A clearly displayed visible signal system approved by the Administrator is installed to alert the equipment operator that maintenance is due. A signal bearing the message ''maintenance needed'' or ''check engine,'' or a similar message approved by the Administrator, shall be actuated at the appropriate usage point or by component failure. This signal must be continuous while the engine is in operation and not be easily eliminated without performance of the required maintenance. Resetting the signal shall be a required step in the maintenance operation. The method for resetting the signal system shall be approved by the Administrator. The system must not be designed to deactivate upon the end of the useful life of the engine or thereafter.

(D) A manufacturer may desire to demonstrate through a survey that a critical maintenance item is likely to be performed without a visible signal on a maintenance item for which there is no prior in-use experience without the signal. To that end, the manufacturer may in a given model year market up to 200 randomly selected vehicles per critical emission-related maintenance item without such visible signals, and monitor the performance of the critical

maintenance item by the owners to show compliance with paragraph (c)(5)(ii)(B) of this section. This option is restricted to two consecutive model years and may not be repeated until any previous survey has been completed. If the critical maintenance involves more than one engine family, the sample will be sales weighted to ensure that it is representative of all the families in question.

(E) The manufacturer provides the maintenance free of charge, and clearly informs the customer that the maintenance is free in the instructions provided under paragraph (a) of this section.

(F) Any other method which the Administrator approves as establishing a reasonable likelihood that the critical maintenance will be performed in-use.

(iii) Visible signal systems used under paragraph (c)(5)(ii)(C) of this section are considered an element of design of the emission control system. Therefore, disabling, resetting, or otherwise rendering such signals inoperative without also performing the indicated maintenance procedure is a prohibited act.

(d) Nonemission-related scheduled maintenance which is reasonable and technologically necessary (e.g., oil change, oil filter change, fuel filter change, air filter change, cooling system maintenance, adjustment of idle speed, governor, engine bolt torque, valve lash, injector lash, timing, lubrication of the exhaust manifold heat control valve, etc.) may be performed on durability vehicles at the least frequent intervals recommended by the manufacturer to the ultimate purchaser, (e.g., not the intervals recommended for severe service).

(e) Adjustment of engine idle speed on emission data engines may be performed once before the low-hour emission test point. Any other engine, emission control system, or fuel system adjustment, repair, removal, disassembly, cleaning, or replacement on emission data vehicles shall be performed only with advance approval of the Administrator.

(f) Equipment, instruments, or tools may not be used to identify malfunctioning, maladjusted, or defective engine components unless the same or equivalent equipment, instruments, or tools will be available to dealerships and other service outlets and:

(1) Are used in conjunction with scheduled maintenance on such components; or

(2) Are used subsequent to the identification of a vehicle or engine malfunction, as provided in paragraph (e) of this section for emission data engines; or

(3) Unless specifically authorized by the Administrator.

(g) All test data, maintenance reports, and required engineering reports shall be compiled and provided to the Administrator in accordance with § 89.124.

18. The newly designated § 89.110 is amended by removing ''and'' at the end of paragraph (b)(9), by adding a semicolon at the end of paragraph (b)(10), and by adding new paragraphs (b)(11) and (b)(12) to read as follows:

§ 89.110 Emission control information label.

* * * * *

(b) * * *

(11) Engines belonging to an engine family that has been certified as a constant-speed engine using the test cycle specified in Table 2 of appendix B to subpart E of this part must contain the statement on the label: ''constant-speed only'';

(12)(i) Engines meeting the voluntary standards described in § 89.112(f)(1) to be designated as Blue Sky Series engines must contain the statement on the label: ''Blue Sky—Class A''.

(ii) Engines meeting the voluntary standards described in § 89.112(f)(2) to be designated as Blue Sky Series engines must contain the statement on the label: ''Blue Sky—Class AA''.

(iii) Engines meeting the voluntary standards described in § 89.112(f)(3) to be designated as Blue Sky Series engines must contain the statement on the label: ''Blue Sky—Class AAA''.

* * * * *

19. The newly designated § 89.112 is amended by revising paragraphs (a), (b), and (d), and adding new paragraphs (e) and (f) to read as follows:

§ 89.112 Oxides of nitrogen, carbon monoxide, hydrocarbon, and particulate matter exhaust emission standards.

(a) Nonroad engines to which this subpart is applicable must meet the exhaust emission standards contained in Table 1 as follows:

TABLE 1.—EMISSION STANDARDS (G/KW-HR)

Rated brake power (kW)	Tier	Model year	NO_X	HC	NMHC+NO_X	CO	PM
kW<8	Tier 1	2000	.....	.....	10.5	8.0	1.0
	Tier 2	2005	.....	.....	7.5	8.0	0.80
8≤kW<19	Tier 1	2000	.....	.....	9.5	6.6	0.80
	Tier 2	2005	.....	.....	7.5	6.6	0.80
19≤kW<37	Tier 1	1999	.....	.....	9.5	5.5	0.80
	Tier 2	2004	.....	.....	7.5	5.5	0.60
37≤kW<75	Tier 1	1998	9.2	.....	.....	.....	.....
	Tier 2	2004	.....	.....	7.5	5.0	0.40
	Tier 3	2008	.....	.....	4.7	5.0	.....
75≤kW<130	Tier 1	1997	9.2	.....	.....	.....	.....
	Tier 2	2003	.....	.....	6.6	5.0	0.30
	Tier 3	2007	.....	.....	4.0	5.0	.....
130≤kW<225	Tier 1	1996	9.2	1.3	.....	11.4	0.54
	Tier 2	2003	.....	.....	6.6	3.5	0.20
	Tier 3	2006	.....	.....	4.0	3.5	.....
225≤kW<450	Tier 1	1996	9.2	1.3	.....	11.4	0.54
	Tier 2	2001	.....	.....	6.4	3.5	0.20
	Tier 3	2006	.....	.....	4.0	3.5	.....
450≤kW<560	Tier 1	1996	9.2	1.3	.....	11.4	0.54
	Tier 2	2002	.....	.....	6.4	3.5	0.20
	Tier 3	2006	.....	.....	4.0	3.5	.....
kW≥560	Tier 1	2000	9.2	1.3	.....	11.4	0.54
	Tier 2	2006	.....	.....	6.4	3.5	0.20

(b) Exhaust emissions of oxides of nitrogen, carbon monoxide, hydrocarbon, and nonmethane hydrocarbon are measured using the procedures set forth in subpart E of this part.

* * * * *

(d) In lieu of the NO_X standards, NMHC + NO_X standards, and PM standards specified in paragraph (a) of this section, manufacturers may elect to include engine families in the averaging, banking, and trading program, the provisions of which are specified in subpart C of this part. The manufacturer must set a family emission limit (FEL) not to exceed the levels contained in Table 2. The FEL established by the manufacturer serves as the standard for that engine family. Table 2 follows:

TABLE 2.—UPPER LIMIT FOR FAMILY EMISSION LIMITS (G/KW-HR)

Rated brake power (kW)	Tier	Model year	NO_X FEL	NMHC+ NO_X FEL	PM FEL
kW<8	Tier 1	2000	.....	16.0	1.2
	Tier 2	2005	.....	10.5	1.0
8≤kW<19	Tier 1	2000	.....	16.0	1.2
	Tier 2	2005	.....	9.5	0.80
19≤kW<37	Tier 1	1999	.....	16.0	1.2
	Tier 2	2004	.....	9.5	0.80
37≤kW<75	Tier 1	1998	14.6	.....	.....
	Tier 2	2004	.....	10.5	1.2
	Tier 3	2008	.....	7.5	
75≤kW<130	Tier 1	1997	14.6	.....	.....
	Tier 2	2003	.....	10.5	1.2
	Tier 3	2007	.....	6.6	
130≤kW<225	Tier 1	1996	14.6	.....	.....
	Tier 2	2003	.....	10.5	0.54
	Tier 3	2006	.....	6.6	
225≤kW<450	Tier 1	1996	14.6	.....	.....
	Tier 2	2001	.....	10.5	0.54
	Tier 3	2006	.....	6.4	
450≤kW<560	Tier 1	1996	14.6	.....	.....
	Tier 2	2002	.....	10.5	0.54
	Tier 3	2006	.....	6.4	
kW≥560	Tier 1	2000	14.6	.....	.....
	Tier 2	2006	.....	10.5	0.54

(e) Naturally aspirated nonroad engines to which this subpart is applicable shall not discharge crankcase emissions into the ambient atmosphere. For engines rated under 37 kW, this provision applies to all 2001 model year engines and later models. For engines rated at or above 37 kW, this provision applies to all Tier 2 engines and later models. This provision does not apply to engines using turbochargers, pumps, blowers, or superchargers for air induction.

(f) Engines may be designated ''Blue Sky Series'' engines through the 2004 model year by meeting the following voluntary standards, which apply to all certification and in-use testing. Emissions are measured using the procedures set forth in 40 CFR part 86, subpart N. Manufacturers may use an alternate procedure to demonstrate the desired level of emission control if approved in advance by the Administrator. Engines meeting the requirements to qualify as Blue Sky Series engines must be capable of maintaining a comparable level of emission control when tested using the procedures set forth in paragraph (c) of this section and subpart E of this part. The numerical emission levels measured using the procedures from this part may be up to 20 percent higher than those measured using the procedures from 40 CFR part 86, subpart N, and still be considered comparable. Engines designated as Blue Sky Series engines must meet the requirements related to in-use durability detailed in §§ 89.104, 89.109, 89.118, and 89.130; alternatively, manufacturers may fulfull these requirements with the comparable provisions from 40 CFR part 86.

(1) Engines certified to voluntary standards at least 35 percent below the numerical level established for Tier 2 engines, for both particulate matter and NMHC + NO_X, may be designated as a ''Blue Sky Series engine—Class A''. Manufacturers must also demonstrate compliance with the numerical level established for CO emissions from the applicable tier of engines, as described in paragraph (a) of this section, and with the smoke emission standards described in § 86.113 of this chapter. This designation will no longer be available beginning in the year for which Tier 2 standards apply to an engine's power category.

(2) Engines certified to voluntary standards at least 50 percent below the numerical level established for Tier 2 engines, for both particulate matter and NMHC + NO_X, may be designated as a ''Blue Sky Series engine—Class AA''. Manufacturers must also demonstrate compliance with the numerical level established for CO emissions from the applicable tier of engines, as described in paragraph (a) of this section, and with the smoke emission standards described in § 86.113 of this chapter.

(3) Engines certified to voluntary standards at least 65 percent below the numerical level established for Tier 2 engines, for both particulate matter and NMHC + NO_X, may be designated as a ''Blue Sky Series engine—Class AAA''. Manufacturers must also demonstrate compliance with the numerical level established for CO emissions from the applicable tier of engines, as described in paragraph (a) of this section, and with the smoke emission standards described in § 86.113 of this chapter.

20. The newly designated § 89.117 is amended by revising paragraph (a) and adding a new paragraph (d) to read as follows:

§ 89.117 Test fleet selection.

(a) The manufacturer must select for testing, from each engine family, the engine with the most fuel injected per stroke of an injector, primarily at the

speed of maximum torque and secondarily at rated speed.

* * * * *

(d) For establishing deterioration factors, the manufacturer shall select the engines, subsystems, or components to be used to determine exhaust emission deterioration factors for each engine-family control system combination. Whether engines, subsystems, or components are used, they shall be selected so that their emission deterioration characteristics may be expected to represent those of in-use engines, based on good engineering judgment.

21. The newly designated § 89.118 is amended by adding a new paragraph (e) to read as follows:

§ 89.118 Service accumulation.

* * * * *

(e) This paragraph (e) describes service accumulation requirements for the purpose of deterioration factor development. Paragraphs (b) through (d) of this section also apply here.

(1) *Service accumulation on engines, subsystems, or components selected by the manufacturer under § 89.117(d).* The manufacturer determines the form and extent of this service accumulation, consistent with good engineering practice, and describes it in the application for certification.

(2) *Determination of exhaust emission deterioration factors.* The manufacturer determines the deterioration factors based on the service accumulation in paragraph (e)(1) of this section and related testing, according to the manufacturer's procedures.

(3) *Alternatives to service accumulation and testing for the determination of a deterioration factor.* A written explanation of the appropriateness of using an alternative must be included in the application for certification.

(i) *Carryover and carryacross of durability emission data.* In lieu of testing an emission data or durability data engine selected under § 89.117(d), and submitting data therefore, a manufacturer may, with Administrator approval, use exhaust emission deterioration data on a similar engine for which certification to the same standard has previously been obtained or for which all applicable data required under § 89.124 has previously been submitted. This data must be submitted in the application for certification.

(ii) *Use of on-highway deterioration data.* In the case where a manufacturer produces a certified on-highway engine that is similar to the nonroad engine to be certified, deterioration data from the on-highway engine may be applied to the nonroad engine. This application of deterioration data from an on-highway engine to a nonroad engine is subject to Administrator approval, and the determination of whether the engines are similar must be based on good engineering judgment.

(iii) *Engineering analysis for established technologies.* (A) In the case where an engine family uses technology which is well established, an analysis based on good engineering practices may be used in lieu of testing to determine a deterioration factor for that engine family.

(B) Engines using exhaust gas recirculation or aftertreatment are excluded from the provision set forth in paragraph (e)(3)(iii)(A) of this section.

(C) Engines for which the certification levels are not at or below the Tier 3 NMHC+NO_X or PM standards described in § 89.112 are considered established technology.

(D) Manufacturers may petition the Administrator to consider an engine with a certification level below the Tier 3 NMHC+NO_X and PM standards as established technology. This petition must be based on proof that the technology used is not significantly different than that used on engines that have certification levels that are not below the Tier 3 NMHC+NO_X and PM levels.

(E) The manufacturer shall provide a written statement to the Administrator that all data, analyses, test procedures, evaluations, and other documents, on which the deterioration factor is based, are available to the Administrator upon request.

22. The newly designated § 89.119 is amended by revising paragraph (d) to read as follows:

§ 89.119 Emission tests.

* * * * *

(d) *Test fuels.* EPA may use the fuel specified in either Table 4 or Table 5 of Appendix A to subpart D of this part in confirmatory testing or other testing on any test engine.

23. The newly designated § 89.120 is amended by revising paragraph (c) and adding paragraph (e) to read as follows:

§ 89.120 Compliance with emission standards.

* * * * *

(c) For each nonroad engine family, except Tier 1 engines with rated power at or above 37 kW that do not employ aftertreatment, a deterioration factor must be determined and applied.

(1) The applicable exhaust emission standards (or family emission limits, as appropriate) for nonroad compression-ignition engines apply to the emissions of engines for their useful life.

(2) Since emission control efficiency generally decreases with the accumulation of service on the engine, deterioration factors will be used in combination with emission data engine test results as the basis for determining compliance with the standards.

(3)(i) This paragraph (c)(3) describes the procedure for determining compliance of an engine with emission standards (or family emission limits, as appropriate), based on deterioration factors supplied by the manufacturer. Deterioration factors shall be established using applicable emission test procedures. NMHC + NO_X deterioration factors shall be established based on the sum of the pollutants. When establishing deterioration factors for NMHC + NO_X, a negative deterioration (emissions decrease from the official emissions test result) for one pollutant may not offset deterioration of the other pollutant. Where negative deterioration occurs for NO_X or NMHC, the official exhaust emission test result shall be used for purposes of determining the NMHC + NO_X deterioration factor.

(ii) Separate exhaust emission deterioration factors, determined from tests of engines, subsystems, or components conducted by the manufacturer, shall be supplied for each engine-system combination. Separate factors shall be established for NMHC, CO, NO_X, NMHC + NO_X, and exhaust particulate. For smoke testing, separate factors shall also be established for the acceleration mode (designated as ''A''), the lugging mode (designated as ''B''), and peak opacity (designated as ''C'').

(iii) Compression-ignition nonroad engines not utilizing aftertreatment technology (e.g., particulate traps). For NMHC, CO, NO_X, NMHC + NO_X, and exhaust particulate, the official exhaust emission results for each emission data engine at the selected test point shall be adjusted by addition of the appropriate deterioration factor. However, if the deterioration factor supplied by the manufacturer is less than zero, it shall be zero for the purposes of this paragraph (c).

(iv) Compression-ignition nonroad engines utilizing aftertreatment technology (e.g., particulate traps). For NMHC, CO, NO_X, NMHC + NO_X, and exhaust particulate, the official exhaust emission results for each emission data engine at the selected test point shall be adjusted by multiplication by the appropriate deterioration factor. However, if the deterioration factor supplied by the manufacturer is less than one, it shall be one for the purposes of this paragraph (c).

(v) For acceleration smoke (''A''), lugging smoke (''B''), and peak opacity

(''C''), the official exhaust emission results for each emission data engine at the selected test point shall be adjusted by the addition of the appropriate deterioration factor. However if the deterioration supplied by the manufacturer is less than zero, it shall be zero for the purposes of this paragraph (c).

(vi) The emission values to compare with the standards (or family emission limits, as appropriate) shall be the adjusted emission values of paragraphs (c)(3) (iii) through (v) of this section, rounded to the same number of significant figures as contained in the applicable standard in accordance with ASTM E29–93a, for each emission data engine. This procedure has been incorporated by reference (see § 89.6).

(4) Every test engine of an engine family must comply with all applicable standards (or family emission limits, as appropriate), as determined in paragraph (c)(3)(vi) of this section, before any engine in that family will be certified.

* * * * *

(e) For the purposes of setting an NMHC + NO_X certification level or FEL, one of the following options shall be used for the determination of NMHC for an engine family. The manufacturer must declare which option is used in its application for certification of that engine family.

(1) THC may be used in lieu of NMHC for the standards set forth in § 89.112.

(2) The manufacturer may choose its own method to analyze methane with prior approval of the Administrator.

(3) The manufacturer may assume that two percent of the measured THC is methane (NMHC=0.98×THC).

24. The newly designated § 89.126 is amended by revising paragraph (c) to read as follows:

§ 89.126 Denial, revocation of certificate of conformity.

* * * * *

(c) If a manufacturer knowingly commits an infraction specified in paragraph (b)(1) or (b)(4) of this section, knowingly commits any other fraudulent act which results in the issuance of a certificate of conformity, or fails to comply with the conditions specified in §§ 89.203(d), 89.206(c), 89.209(c) or 89.210(g), the Administrator may deem such certificate void ab initio.

* * * * *

25. A new § 89.130 is added to subpart B to read as follows:

§ 89.130 Rebuild practices.

(a) The provisions of this section are applicable to engines subject to the standards prescribed in section § 89.112 and are applicable to the process of engine rebuilding (or rebuilding a portion of an engine or engine system). This section does not apply to Tier 1 engines rated at or above 37 kW. The process of engine rebuilding generally includes disassembly, replacement of multiple parts due to wear, and reassembly, and also may include the removal of the engine from the vehicle and other acts associated with rebuilding an engine. Any deviation from the provisions contained in this section is a prohibited act.

(b) When rebuilding an engine, portions of an engine, or an engine system, there must be a reasonable technical basis for knowing that the resultant engine is equivalent, from an emissions standpoint, to a certified configuration (i.e., tolerances, calibrations, specifications) of the same or newer model year as the original engine. A reasonable basis would exist if:

(1) Parts installed, whether the parts are new, used, or rebuilt, are such that a person familiar with the design and function of motor vehicle engines would reasonably believe that the parts perform the same function with respect to emission control as the original parts; and

(2) Any parameter adjustment or design element change is made only:

(i) In accordance with the original engine manufacturer's instructions; or

(ii) Where data or other reasonable technical basis exists that such parameter adjustment or design element change, when performed on the engine or similar engines, is not expected to adversely affect in-use emissions.

(c) When an engine is being rebuilt and remains installed or is reinstalled in the same equipment, it must be rebuilt to a configuration of the same or later model year as the original engine. When an engine is being replaced, the replacement engine must be an engine of (or rebuilt to) a configuration of the same or later model year as the original engine.

(d) At time of rebuild, emission-related codes or signals from on-board monitoring systems may not be erased or reset without diagnosing and responding appropriately to the diagnostic codes, regardless of whether the systems are installed to satisfy requirements in § 89.109 or for other reasons and regardless of form or interface. Diagnostic systems must be free of all such codes when the rebuilt engine is returned to service. Such signals may not be rendered inoperative during the rebuilding process.

(e) When conducting a rebuild without removing the engine from the equipment, or during the installation of a rebuilt engine, all critical emission-related components listed in § 86.109–99(d) of this chapter not otherwise addressed by paragraphs (b) through (d) of this section must be checked and cleaned, adjusted, repaired, or replaced as necessary, following manufacturer recommended practices.

(f) Records shall be kept by parties conducting activities included in paragraphs (b) through (e) of this section. The records shall include at minimum the hours of operation at time of rebuild, a listing of work performed on the engine, and emission-related control components including a listing of parts and components used, engine parameter adjustments, emission-related codes or signals responded to and reset, and work performed under paragraph (e) of this section.

(1) Parties may keep records in whatever format or system they choose as long as the records are understandable to an EPA enforcement officer or can be otherwise provided to an EPA enforcement officer in an understandable format when requested.

(2) Parties are not required to keep records of information that is not reasonably available through normal business practices including information on activities not conducted by themselves or information that they cannot reasonably access.

(3) Parties may keep records of their rebuilding practices for an engine family rather than on each individual engine rebuilt in cases where those rebuild practices are followed routinely.

(4) Records must be kept for a minimum of two years after the engine is rebuilt.

Subpart C—[Amended]

26. The newly designated § 89.203 is revised to read as follows:

§ 89.203 General provisions.

(a) The averaging, banking, and trading programs for NO_X, NMHC + NO_X, and PM emissions from eligible nonroad engines are described in this subpart. Participation in these programs is voluntary.

(b) Tier 1 engines rated at or above 37 kW. (1) A nonroad engine family is eligible to participate in the averaging, banking, and trading program for NO_X emissions and the banking and trading program for PM emissions if it is subject to regulation under subpart B of this part with certain exceptions specified in paragraph (b)(2) of this section. No averaging, banking, and trading program

is available for meeting the Tier 1 HC, CO, or smoke emission standards specified in subpart B of this part. No averaging program is available for meeting the Tier 1 PM emission standards specified in subpart B of this part.

(2) Nonroad engines may not participate in the averaging, banking, and trading programs if they are subject to state engine emission standards, are exported, or use an alternate or special test procedure under § 89.114. Meeting the voluntary standards described in § 89.112(f) for Blue Sky Series engines does not preclude participation in the averaging, banking, and trading programs; however, participation in the averaging, banking, and trading programs depends on manufacturers developing test data on a steady-state test cycle, as specified in § 89.410(a), for credit computation purposes.

(3) A manufacturer may certify one or more nonroad engine families at NO_X family emission limits (FELs) above or below the Tier 1 NO_X emission standard, provided the summation of the manufacturer's projected balance of all NO_X credit transactions in a given model year is greater than or equal to zero, as determined under § 89.207(a). A manufacturer may certify one or more nonroad engine families at PM FELs below the Tier 2 PM emission standard that will be applicable to those engine families.

(i) FELs for NO_X may not exceed the Tier 1 upper limit specified in § 89.112(d).

(ii) An engine family certified to an FEL is subject to all provisions specified in subparts B, D, E, F, G, H, I, J, and K of this part, except that the applicable FEL replaces the emission standard for the family participating in the averaging, banking, and trading program.

(iii) A manufacturer of an engine family with an NO_X FEL exceeding the Tier 1 NO_X emission standard must obtain NO_X emission credits sufficient to address the associated credit shortfall via averaging, banking, or trading.

(iv) An engine family with a NO_X FEL below the applicable Tier 1 standard may generate emission credits for averaging, banking, trading, or a combination thereof. An engine family with a PM FEL below the Tier 2 standard that will be applicable to that engine family may generate emission credits for banking, trading, or a combination thereof. Emission credits may not be used to offset an engine family's emissions that exceed its applicable FEL. Credits may not be used to remedy nonconformity determined by a Selective Enforcement Audit (SEA) or by recall (in-use) testing. However, in the case of an SEA failure, credits may be used to allow subsequent production of engines for the family in question if the manufacturer elects to recertify to a higher FEL.

(4) NO_X credits generated in a given model year may be used to address credit shortfalls with other engines during that model year or in any subsequent model year except as noted under paragraph (b)(5)(ii) of this section. PM credits may be used to address credit shortfalls with Tier 2 and later engines greater than or equal to 37 kW and Tier 1 and later engines less than 37 kW and greater than or equal to 19 kW. Credits generated in one model year may not be used for prior model years.

(5) Using Tier 1 NO_X credits for showing compliance with Tier 2 NMHC + NO_X credits.

(i) A manufacturer may use NO_X credits from engines subject to the Tier 1 standards to address NMHC + NO_X credit shortfall with engines in the same averaging set subject to Tier 2 NMHC + NO_X emission standards.

(ii) NO_X credits generated from Tier 1 engines may not be used to address credit shortfalls with engines subject to the Tier 3 NMHC + NO_X standards.

(c) *Tier 2 and later engines rated at or above 37 kW and Tier 1 and later engines rated under 37 kW.* (1) A nonroad engine family is eligible to participate in the averaging, banking, and trading programs for NMHC + NO_X emissions and PM emissions if it is subject to regulation under subpart B of this part with certain exceptions specified in subsection (c)(2) of this section. No averaging, banking, and trading program is available for meeting the CO or smoke emission standards specified in subpart B of this part.

(2) Nonroad engines may not participate in the averaging, banking, and trading programs if they are subject to state engine emission standards, are exported, or use an alternate or special test procedure under § 89.114. Meeting the voluntary standards described in § 89.112(f) for Blue Sky Series engines does not preclude participation in the averaging, banking, and trading programs; however, participation in the averaging, banking, and trading programs depends on manufacturers developing test data on a steady-state test cycle, as specified in § 89.410(a), for credit computation purposes.

(3)(i) A manufacturer may certify one or more nonroad engine families at FELs above or below the applicable NMHC + NO_X emission standard and PM emission standard, provided the summation of the manufacturer's projected balance of all NMHC + NO_X credit transactions and the summation of the manufacturer's projected balance of all PM credit transactions in a given model year in a given averaging set is greater than or equal to zero, as determined under § 89.207(b).

(A) FELs for NMHC + NO_X and FELs for PM may not exceed the upper limits specified in § 89.112(d).

(B) An engine family certified to an FEL is subject to all provisions specified in subparts B, D, E, F, G, H, I, J, and K of this part, except that the applicable FEL replaces the emission standard for the family participating in the averaging, banking, and trading program.

(C) A manufacturer of an engine family with an FEL exceeding the applicable emission standard must obtain emission credits sufficient to address the associated credit shortfall via averaging, banking, or trading, within the restrictions described in §§ 89.204(c) and 89.206(b)(4).

(D) An engine family with an FEL below the applicable standard may generate emission credits for averaging, banking, trading, or a combination thereof. Emission credits may not be used to offset an engine family's emissions that exceed its applicable FEL. Credits may not be used to remedy nonconformity determined by a Selective Enforcement Audit (SEA) or by recall (in-use) testing. However, in the case of an SEA failure, credits may be used to allow subsequent production of engines for the family in question if the manufacturer elects to recertify to a higher FEL.

(ii)(A) In lieu of generating credits under paragraph (c)(3)(i) of this section, a manufacturer may certify one or more nonroad engine families rated under 37 kW at family emission limits (FELs) above or below the applicable NMHC + NO_X emission standard and PM emission standard. The summation of the manufacturer's projected balance of all NMHC + NO_X credit transactions and the summation of the manufacturer's projected balance of all PM credit transactions in a given model year, as determined under § 89.207(b), is allowed to be less than zero. Separate calculations shall be required for the following two categories of engines: engines rated under 19 kW and engines rated at or above 19kW and under 37 kW.

(B) A penalty equal to ten percent of the year end negative credit balance shall be added to the negative credit balance. The resulting negative credit balance shall be carried into the next model year.

(C) For engines rated under 19 kW, a manufacturer will be allowed to carry

over a negative credit balance until December 31, 2003. For engines rated at or above 19 kW and under 37 kW, a manufacturer will be allowed to carry over a negative credit balance until December 31, 2002. As of these dates, the summation of the manufacturer's projected balance of all NMHC + NO_X credit transactions and the summation of the manufacturer's projected balance of all PM credit transactions must be greater than or equal to zero.

(D) FELs for NMHC + NO_X and FELs for PM may not exceed the upper limits specified in § 89.112(d).

(E) An engine family certified to an FEL is subject to all provisions specified in subparts B, D, E, F, G, H, I, J, and K of this part, except that the applicable NMHC + NO_X FEL or PM FEL replaces the NMHC + NO_X emission standard or PM emission standard for the family participating in the averaging and banking program.

(F) A manufacturer of an engine family with an FEL exceeding the applicable emission standard must obtain emission credits sufficient to address the associated credit shortfall via averaging or banking. The exchange of emission credits generated under this program with other nonroad engine manufacturers in trading is not allowed.

(G) An engine family with an FEL below the applicable standard may generate emission credits for averaging, banking, or a combination thereof. Emission credits may not be used to offset an engine family's emissions that exceed its applicable FEL. Credits may not be used to remedy nonconformity determined by a Selective Enforcement Audit (SEA) or by recall (in-use) testing. However, in the case of an SEA failure, credits may be used to allow subsequent production of engines for the family in question if the manufacturer elects to recertify to a higher FEL.

(4)(i) Except as noted in paragraphs (c)(4)(ii), (c)(4)(iii), and (c)(4)(iv) of this section, credits generated in a given model year may be used during that model year or used in any subsequent model year. Except as allowed under paragraph (c)(3)(ii) of this section, credits generated in one model year may not be used for prior model years.

(ii) Credits generated from engines rated under 19 kW prior to the implementation date of the applicable Tier 2 standards, shall expire on December 31, 2007.

(iii) Credits generated from engines rated under 19 kW under the provisions of paragraph (c)(3)(ii) shall expire on December 31, 2003.

(iv) Credits generated from engines rated at or above 19 kW and under 37 kW under the provisions of paragraph (c)(3)(ii) shall expire on December 31, 2002.

(d) Manufacturers must demonstrate compliance under the averaging, banking, and trading programs for a particular model year by 270 days after the model year. Engine families without an adequate amount of emission credits, except as allowed under paragraph (c)(3)(ii) of this section, will violate the conditions of the certificates of conformity. The certificates of conformity may be voided ab initio under § 89.126(c) for those engine families.

(e) Engine families may not generate credits for one pollutant while also using credits for another pollutant in the same model year.

(f) An engine manufacturer may exchange NO_X emission credits, NMHC + NO_X emission credits, and PM emission credits to equipment or vehicle manufacturers in trading. Such credits may be used within the provisions specified in § 89.102(d)(3).

27. The newly designated § 89.204 is revised to read as follows:

§ 89.204 Averaging.

(a) *Tier 1 engines rated at or above 37 kW.* (1) A manufacturer may use averaging to offset an emission exceedance of a nonroad engine family caused by a NO_X FEL above the applicable emission standard. NO_X credits used in averaging may be obtained from credits generated by another engine family in the same model year, credits banked in a previous model year, or credits obtained through trading.

(2) Credits scheduled to expire in the earliest model year must be used first, before using other available credits.

(b) *Tier 2 and later engines rated at or above 37 kW and Tier 1 and later engines rated under 37 kW.* (1) A manufacturer may use averaging to offset an emission exceedance of a nonroad engine family caused by an NMHC + NO_X FEL or a PM FEL above the applicable emission standard. Credits used in averaging may be obtained from credits generated by another engine family in the same model year, credits banked in previous model years that have not expired, or credits obtained through trading. The use of credits shall be within the restrictions described in paragraph (c) of this section and § 89.206(b)(4).

(2) Credits scheduled to expire in the earliest model year must be used first, before using other available credits.

(c) *Averaging sets for emission credits.* The averaging and trading of NO_X emission credits, NMHC + NO_X emission credits, and PM emissions credits will only be allowed between engine families in the same averaging set. The averaging sets for the averaging and trading of NO_X emission credits, NMHC + NO_X emission credits, and PM emission credits for nonroad engines are defined as follows:

(1) Eligible engines, other than marine diesel engines rated at or above 19 kW, constitute an averaging set.

(2) Marine diesel engines rated at or above 19 kW constitute an averaging set. Emission credits generated from marine diesel engines rated at or above 19 kW may be used to address credit shortfalls for eligible engines other than marine diesel engines rated at or above 19 kW.

(3) Eligible engines, other than marine diesel engines rated under 19 kW, constitute an averaging set.

(4) Marine diesel engines rated under 19 kW constitute an averaging set. Emission credits generated from marine diesel engines rated under 19 kW may be used to address credit shortfalls for eligible engines other than marine diesel engines rated under 19 kW.

28. The newly designated § 89.205 is revised to read as follows:

§ 89.205 Banking.

(a) *Tier 1 engines rated at or above 37 kW.* (1) A manufacturer of a nonroad engine family with a NO_X FEL below the applicable standard for a given model year may bank credits in that model year for use in averaging and trading in any subsequent model year.

(2) A manufacturer of a nonroad engine family may bank NO_X credits up to one calendar year prior to the effective date of mandatory certification. Such engines must meet the requirements of subparts A, B, D, E, F, G, H, I, J, and K of this part.

(3)(i) A manufacturer of a nonroad engine family may bank PM credits from Tier 1 engines under the provisions specified in § 89.207(b) for use in averaging and trading in the Tier 2 or later timeframe provided the engine family is certified without an FEL above the Tier 1 NO_X standard.

(ii) Such engine families are subject to all provisions specified in subparts B, D, E, F, G, H, I, J, and K of this part, except that the applicable PM FEL replaces the PM emission standard for the family participating in the banking and trading program.

(b) *Tier 2 and later engines rated at or above 37 kW and Tier 1 and later engines rated under 37 kW.* (1) A manufacturer of a nonroad engine family with an NMHC + NO_X FEL or a PM FEL below the applicable standard for a given model year may bank credits in that model year for use in averaging

and trading in any following model year.

(2) For engine rated under 37 kW, a manufacturer of a nonroad engine family may bank credits prior to the effective date of mandatory certification. Such engines must meet the requirements of subparts A, B, D, E, F, G, H, I, J, and K of this part.

(c) A manufacturer may bank actual credits only after the end of the model year and after EPA has reviewed the manufacturer's end-of-year reports. During the model year and before submittal of the end-of-year report, credits originally designated in the certification process for banking will be considered reserved and may be redesignated for trading or averaging in the end-of-year report and final report.

(d) Credits declared for banking from the previous model year that have not been reviewed by EPA may be used in averaging or trading transactions. However, such credits may be revoked at a later time following EPA review of the end-of-year report or any subsequent audit actions.

29. The newly designated § 89.206 is revised to read as follows:

§ 89.206 Trading.

(a) *Tier 1 engines rated at or above 37 kW.* (1) A nonroad engine manufacturer may exchange emission credits with other nonroad engine manufacturers within the same averaging set in trading.

(2) Credits for trading can be obtained from credits banked in a previous model year or credits generated during the model year of the trading transaction.

(3) Traded credits can be used for averaging, banking, or further trading transactions within the restrictions described in § 89.204(c).

(b) *Tier 2 and later engines rated at or above 37 kW and Tier 1 and later engines rated under 37 kW.* (1) A nonroad engine manufacturer may exchange emission credits with other nonroad engine manufacturers within the same averaging set in trading.

(2) Credits for trading can be obtained from credits banked in previous model years that have not expired or credits generated during the model year of the trading transaction.

(3) Traded credits can be used for averaging, banking, or further trading transactions within the restrictions described in § 89.204(c) and paragraph (b)(4) of this section.

(4) Emission credits generated from engines rated at or above 19 kW utilizing indirect fuel injection may not be traded to other manufacturers.

(c) In the event of a negative credit balance resulting from a transaction, both the buyer and the seller are liable, except in cases involving fraud. Certificates of all engine families participating in a negative trade may be voided ab initio under § 89.126(c).

30. The newly designated § 89.207 is revised to read as follows:

§ 89.207 Credit calculation.

(a) *NO_X credits from Tier 1 engines rated at or above 37 kW.* (1) For each participating engine family, emission credits (positive or negative) are to be calculated according to one of the following equations and rounded, in accordance with ASTM E29–93a, to the nearest one-tenth of a megagram (Mg). This procedure has been incorporated by reference (see § 89.6). Consistent units are to be used throughout the equation.

(i) For determining credit availability from all engine families generating credits:

$$\text{Emission credits} = (\text{Std}—\text{FEL}) \times (\text{Volume}) \times (\text{AvgPR}) \times (\text{UL}) \times (\text{Adjustment}) \times (10^{-6})$$

(ii) For determining credit usage for all engine families requiring credits to offset emissions in excess of the standard:

$$\text{Emission credits} = (\text{Std}—\text{FEL}) \times (\text{Volume}) \times (\text{AvgPR}) \times (\text{UL}) \times (10^{-6})$$

Where:

Std = the applicable Tier 1 NO_X nonroad engine emission standard, in grams per brake horsepower hour.

FEL = the NO_X family emission limit for the engine family in grams per brake horsepower hour.

Volume = the number of nonroad engines eligible to participate in the averaging, banking, and trading program within the given engine family during the model year. Engines sold to equipment or vehicle manufacturers under the provisions of § 89.102(g) shall not be included in this number. Quarterly production projections are used for initial certification. Actual applicable production/sales volumes is used for end-of-year compliance determination.

AvgPR = the average power rating of all of the configurations within an engine family, calculated on a sales-weighted basis.

UL = the useful life for the engine family, in hours.

Adjustment = a one-time adjustment, as specified in paragraph (a)(2) of this section, to be applied to Tier 1 NO_X credits to be banked or traded for determining compliance with the Tier 1 NO_X standards or Tier 2 NO_X+NMHC standards specified in subpart B of this part. Banked credits traded in a subsequent model year will not be subject to an additional adjustment. Banked credits used in a subsequent model year's averaging program will not have the adjustment restored.

(2) If an engine family is certified to a NO_X FEL of 8.0 g/kW-hr or less, an Adjustment value of 1.0 shall be used in the credit generation calculation described in paragraph (a)(1)(i) of this section. If an engine family is certified to a NO_X FEL above 8.0 g/kW-hr, an Adjustment value of 0.65 shall be used in the credit generation calculation described in paragraph (a)(1)(i) of this section. If the credits are to be used by the credit-generating manufacturer for averaging purposes in the same model year in which they are generated, an Adjustment value of 1.0 shall be used for all engines regardless of the level of the NO_X FEL.

(b) *NMHC + NO_X Credits from Tier 2 and later engines rated at or above 37 kW and Tier 1 and later engines rated under 37 kW and PM credits from all engines.* (1) For each participating engine family, NO_X + NMHC emission credits and PM emission credits (positive or negative) are to be calculated according to one of the following equations and rounded, in accordance with ASTM E29–93a, to the nearest one-tenth of a megagram (Mg). This procedure has been incorporated by reference (see § 89.6). Consistent units are to be used throughout the equation.

(i) For determining credit availability from all engine families generating credits:

$$\text{Emission credits} = (\text{Std}—\text{FEL}) \times (\text{Volume}) \times (\text{AvgPR}) \times (\text{UL}) \times (10-6)$$

(ii) For determining credit usage for all engine families requiring credits to offset emissions in excess of the standard:

$$\text{Emission credits} = (\text{Std}—\text{FEL}) \times (\text{Volume}) \times (\text{AvgPR}) \times (\text{UL}) \times (10-6)$$

Where:

Std = the current and applicable nonroad engine emission standard, in grams per brake horsepower hour, except for PM calculations where it is the applicable nonroad engine Tier 2 PM emission standard, and except for engines rated under 19 kW where it is the applicable nonroad engine Tier 2 emission standard, in grams per brake horsepower hour. (Engines rated under 19 kW participating in the averaging and banking program provisions of § 89.203(c)(3)(ii) shall use the Tier 1 standard for credit calculations.)

FEL = the family emission limit for the engine family in grams per brake horsepower hour.

Volume = the number of nonroad engines eligible to participate in the averaging, banking, and trading program within the given engine family during the model year. Engines sold to equipment or vehicle manufacturers under the provisions of § 89.102(g) shall not be included in this number. Quarterly production projections are used for initial certification. Actual applicable production/sales volumes is used for end-of-year compliance determination.

AvgPR = the average power rating of all of the configurations within an engine family, calculated on a sales-weighted basis.

UL = the useful life for the given engine family, in hours.

31. The newly designated § 89.208 is revised to read as follows:

§ 89.208 Labeling.

For all nonroad engines included in the averaging, banking, and trading programs, the family emission limits to which the engine is certified must be included on the label required in § 89.110.

32. The newly designated § 89.209 is amended by revising paragraph (a) to read as follows:

§ 89.209 Certification.

(a) In the application for certification a manufacturer must:

(1) Declare its intent to include specific engine families in the averaging, banking, and trading programs.

(2) Submit a statement that the engines for which certification is requested will not, to the best of the manufacturer's belief, cause the manufacturer to have a negative credit balance when all credits are calculated for all the manufacturer's engine families participating in the averaging, banking, and trading programs, except as allowed under § 89.203(c)(3)(ii).

(3) Declare the applicable FELs for each engine family participating in averaging, banking, and trading.

(i) The FELs must be to the same number of significant digits as the emission standard for the applicable pollutant.

(ii) In no case may the FEL exceed the upper limits prescribed in § 89.112(d).

(4) Indicate the projected number of credits generated/needed for this family; the projected applicable production/sales volume, by quarter; and the values required to calculate credits as given in § 89.207.

(5) Submit calculations in accordance with § 89.207 of projected emission credits (positive or negative) based on quarterly production projections for each participating family.

(6)(i) If the engine family is projected to have negative emission credits, state specifically the source (manufacturer/engine family or reserved) of the credits necessary to offset the credit deficit according to quarterly projected production, or, if the engine family is to be included in the provisions of § 89.203(c)(3)(ii), state that the engine family will be included in those provisions.

(ii) If the engine family is projected to generate credits, state specifically (manufacturer/engine family or reserved) where the quarterly projected credits will be applied.

* * * * *

33. The newly designated § 89.210 is amended by revising paragraphs (b) and (c) to read as follows:

§ 89.210 Maintenance of records.

* * * * *

(b) The manufacturer of any nonroad engine family that is certified under the averaging, banking, and trading programs must establish, maintain, and retain the following adequately organized and indexed records for each such family:

(1) EPA engine family;

(2) Family emission limits (FEL);

(3) Power rating for each configuration tested;

(4) Projected applicable production/sales volume for the model year; and

(5) Actual applicable production/sales volume for the model year.

(c) Any manufacturer producing an engine family participating in trading reserved credits must maintain the following records on a quarterly basis for each engine family in the trading program:

(1) The engine family;

(2) The actual quarterly and cumulative applicable production/sales volume;

(3) The values required to calculate credits as given in § 89.207;

(4) The resulting type and number of credits generated/required;

(5) How and where credit surpluses are dispersed; and

(6) How and through what means credit deficits are met.

* * * * *

34. The newly designated § 89.211 is amended by revising paragraphs (a) and (c) to read as follows:

§ 89.211 End-of-year and final reports.

(a) End-of-year and final reports must indicate the engine family, the actual applicable production/sales volume, the values required to calculate credits as given in § 89.207, and the number of credits generated/required. Manufacturers must also submit how and where credit surpluses were dispersed (or are to be banked) and/or how and through what means credit deficits were met. Copies of contracts related to credit trading must be included or supplied by the broker, if applicable. The report shall include a calculation of credit balances to show that the summation of the manufacturer's use of credits results in a credit balance equal to or greater than zero, except as allowed under § 89.203(c)(3)(ii).

* * * * *

(c)(1) End-of-year reports must be submitted within 90 days of the end of the model year to: Director, Engine Programs and Compliance Division (6405–J), U.S. Environmental Protection Agency, 401 M Street SW., Washington, DC 20460.

(2) Final reports must be submitted within 270 days of the end of the model year to: Director, Engine Programs and Compliance Division (6405–J), U.S. Environmental Protection Agency, 401 M Street SW., Washington, DC 20460.

* * * * *

35. The newly designated § 89.212 is revised to read as follows:

§ 89.212 Notice of opportunity for hearing.

Any voiding of the certificate under §§ 89.203(d), 89.206(c), 89.209(c) and 89.210(g) will be made only after the manufacturer concerned has been offered an opportunity for a hearing conducted in accordance with §§ 89.512 and 89.513 and, if a manufacturer requests such a hearing, will be made only after an initial decision by the Presiding Officer.

Subpart D—[Amended]

36. The newly designated § 89.302 is revised to read as follows:

§ 89.302 Definitions.

The definitions in subpart A of this part apply to this subpart. For terms not defined in this part, the definitions in part 86, subparts A, D, I, and N, of this chapter apply to this subpart.

37. The newly designated § 89.304 is amended by revising paragraph (c) to read as follows:

§ 89.304 Equipment required for gaseous emissions; overview.

* * * * *

(c) Analyzers used are a non-dispersive infrared (NDIR) absorption type for carbon monoxide and carbon dioxide analysis; a heated flame ionization (HFID) type for hydrocarbon analysis; and a chemiluminescent detector (CLD) or heated chemiluminescent detector (HCLD) for oxides of nitrogen analysis. A gas chromatograph (GC) may also be required for methane analysis. Sections

89.309 through 89.324 set forth a full description of analyzer requirements and specifications.

38. The newly designated § 89.307 is amended by revising paragraphs (b)(7) and (b)(8) to read as follows:

§ 89.307 Dynamometer calibration.

* * * * *

(b) * * *

(7) The measured torque must be within either 2 percent of point or 1 percent of the engine maximum torque of the calculated torque.

(8) If the measured torque is not within the above requirements adjust or repair the system. Repeat steps in paragraphs (b)(1) through (b)(6) of this section with the adjusted or repaired system.

* * * * *

39. The newly designated § 89.308 is amended by revising paragraph (b) to read as follows:

§ 89.308 Sampling system requirements for gaseous emissions.

* * * * *

(b) If water is removed by condensation, the sample gas temperature shall be monitored within the water trap or the sample dewpoint shall be monitored downstream. In either case, the indicated temperature shall not exceed 7 °C.

40. The newly designated § 89.309 is amended by removing and reserving paragraph (a)(3) and revising paragraphs (a)(4)(iii), (a)(5)(i)(C), and (a)(5)(i)(D) and adding paragraph (a)(6) to read as follows:

§ 89.309 Analyzers required for gaseous emissions.

(a) * * *

(3) [Reserved]

(4) * * *

(iii) The FID oven must be capable of maintaining temperature within 5.5 °C of the set point.

* * * * *

(5) * * *

(i) * * *

(C) For raw analysis, an ice bath or other cooling device located after the NO_X converter (optional for dilute analysis).

(D) A chemiluminescent detector (CLD or HCLD).

* * * * *

(6) *Methane analysis.* (i) Using a methane analyzer consisting of a gas chromatograph combined with an FID, the measurement of methane shall be in accordance with SAE Recommended Practice J1151, ''Methane Measurement Using Gas Chromatography.'' (Incorporated by reference pursuant to § 86.1(b)(2).)

(ii) As an option, the manufacturer may choose the analyzer to be used for methane measurement with the prior approval of the Administrator.

* * * * *

41. The newly designated § 89.310 is amended by revising paragraphs (a)(1) and (c) to read as follows:

§ 89.310 Analyzer accuracy and specifications.

(a) * * *

(1) *Response time.* As necessary, measure and account for the response time of the analyzer.

* * * * *

(c) *Emission measurement accuracy—Bagged sampling.* (1) Good engineering practice dictates that exhaust emission sample analyzer readings below 15 percent of full-scale chart deflection should generally not be used.

(2) Some high resolution read-out systems, such as computers, data loggers, and so forth, can provide sufficient accuracy and resolution below 15 percent of full scale. Such systems may be used provided that additional calibrations of at least 4 non-zero nominally equally spaced points, using good engineering judgement, below 15 percent of full scale are made to ensure the accuracy of the calibration curves. If a gas divider is used, the gas divider must conform to the accuracy requirements specified in § 89.312(c). The procedure in paragraph (c)(3) of this section may be used for calibration below 15 percent of full scale.

(3) The following procedure shall be followed:

(i) Span the l analyzer using a calibration gas meeting the accuracy requirements of § 89.312(c), within the operating range of the analyzer, and at least 90% of full scale.

(ii) Generate a calibration over the full concentration range at a minimum of 6, approximately equally spaced, points (e.g. 15, 30, 45, 60, 75, and 90 percent of the range of concetrations provided by the gas divider). If a gas divider or blender is being used to calibrate the analyzer and the requirements of paragraph (c)(2) of this section are met, verify that a second calibration gas between 10 and 20 percent of full scale can be named within 2 percent of its certified concentration.

(iii) If a gas divider or blender is being used to calibrate the analyzer, input the value of a second calibration gas (a span gas may be used for the CO2 analyzer) having a named concentration between 10 and 20 percent of full scale. This gas shall be included on the calibration curve. Continue adding calibration points by dividing this gas until the requirements of paragraph (c)(2) of this section are met.

(iv) Fit a calibration curve per §§ 89.319 through 89.322 for the full scale range of the analyzer using the calibration data obtained with both calibration gases.

* * * * *

42. The newly designated § 89.312 is amended by revising paragraphs (c)(2), (d), and (f) and adding a new paragraph (g) to read as follows:

§ 89.312 Analytical gases.

* * * * *

(c) * * *

(2) Mixtures of gases having the following chemical compositions shall be available:

C_3H_8 and purified synthetic air;

C_3H_8 and purified nitrogen (optional for raw measurements);

CO and purified nitrogen;

NO_X and purified nitrogen (the amount of NO_2 contained in this calibration gas must not exceed 5 percent of the NO content);

CO_2 and purified nitrogen.

* * * * *

(d) Oxygen interference check gases shall contain propane with 350 ppmC±75 ppmC hydrocarbon. The three oxygen interference gases shall contain 21%±1% O_2,10%±1% O_2, and 5%±1% O_2. The concentration value shall be determined to calibration gas tolerances by chromatographic analysis of total hydrocarbons plus impurities or by dynamic blending. Nitrogen shall be the predominant diluent with the balance oxygen.

* * * * *

(f) Hydrocarbon analyzer burner air. The concentration of oxygen for raw sampling must be within 1 mole percent of the oxygen concentration of the burner air used in the latest oxygen interference check (%O_2I). If the difference in oxygen concentration is greater than 1 mole percent, then the oxygen interference must be checked and, if necessary, the analyzer adjusted to meet the %O_2I requirements. The burner air must contain less than 2 ppmC hydrocarbon.

(g) Gases for the methane analyzer shall be single blends of methane using air as the diluent.

43. The newly designated § 89.314 is amended by revising paragraphs (a) and (b) to read as follows:

§ 89.314 Pre- and post-test calibration of analyzers.

* * * * *

(a) The calibration is checked by using a zero gas and a span gas whose nominal value is between 75 percent

and 100 percent of full-scale, inclusive, of the measuring range.

(b) After the end of the final mode, a zero gas and the same span gas will be used for rechecking. As an option,the zero and span may be rechecked at the end of each mode or each test segment. The analysis will be considered acceptable if the difference between the two measuring results is less than 2 percent of full scale.

§ 89.316 [Amended]

44. The newly designated § 89.316 is amended by removing and reserving paragraph (b).

45. The newly designated § 89.317 is amended by revising paragraphs (g), (h), and (k) to read as follows:

§ 89.317 NO_X converter check.

* * * * *

(g) Turn on the NO_X generator O_2 (or air) supply and adjust the O_2 (or air) flow rate so that the NO indicated by the analyzer is about 10 percent less than indicated in paragraph (f) of this section. Record the concentration of NO in this NO+O_2 mixture.

(h) Switch the NO_X generator to the generation mode and adjust the generation rate so that the NO measured on the analyzer is 20 percent of that measured in paragraph (f) of this section. There must be at least 10 percent unreacted NO at this point. Record the concentration of residual NO.

* * * * *

(k) Turn off the NO_X generator O_2 (or air) supply. The analyzer will now indicate the NO_X in the original NO-in-N_2 mixture. This value should be no more than 5 percent above the value indicated in paragraph (f) of this section.

* * * * *

46. The newly designated § 89.318 is amended by revising paragraphs (c)(2)(i) and (c)(2)(iv) to read as follows:

§ 89.318 Analyzer interference checks.

* * * * *

(c) * * *

(2) *NO_X analyzer water quench check.* (i) This check applies to wet measurements only. An NO span gas having a concentration of 80 to 100 percent of full scale of a normal operating range shall be passed through the CLD (or HCLD) and the response recorded as D. The NO span gas shall then be bubbled through water at room temperature and passed through the CLD (or HCLD) and the analyzer response recorded as AR. Determine and record the bubbler absolute operating pressure and the bubbler water temperature. (It is important that the NO span gas contains minimal NO_2 concentration for this check. No allowance for absorption of NO_2 in water has been made in the following quench calculations. This test may be optionally run in the NO mode to minimize the effect of any NO_2 in the NO span gas.)

* * * * *

(iv)(A) The maximum raw or dilute exhaust water vapor concentration expected during testing (designated as Wm) can be estimated from the CO_2 span gas (or as defined in the equation in this paragraph and designated as A) criteria in paragraph (c)(1) of this section and the assumption of a fuel atom H/C ratio of 1.8:1 as:

$Wm(\%)=0.9\times A(\%)$

Where:

A= maximum CO_2 concentration expected in the sample system during testing.

(B) Percent water quench shall not exceed 3 percent and shall be calculated by:

$$\%\text{Water Quench} = 100 \times \frac{D1 - AR}{D1} \times \frac{Wm}{Z1}$$

47. The newly designated § 89.319 is amended by revising paragraphs (b)(1), (b)(2), (c), (d) introductory text, (d)(2), and (d)(6) to read as follows:

§ 89.319 Hydrocarbon analyzer calibration.

* * * * *

(b) *Initial and periodic optimization of detector response.* * * *

(1) Follow good engineering practices for initial instrument start-up and basic operating adjustment using the appropriate fuel (see § 89.312(e)) and zero-grade air.

(2) Optimize the FID's response on the most common operating range. The response is to be optimized with respect to fuel pressure or flow. Efforts shall be made to minimize response variations to different hydrocarbon species that are expected to be in the exhaust. Good engineering judgement is to be used to trade off optimal FID response to propane-in-air against reductions in relative responses to other hydrocarbons. A good example of trading off response on propane for relative responses to other hydrocarbon species is given in Society of Automotive Engineers (SAE) Paper No. 770141, ''Optimization of Flame Ionization Detector for Determination of Hydrocarbon in Diluted Automotive Exhausts''; author Glenn D. Reschke. It is also required that the response be set to optimum condition with respect to air flow and sample flow. Heated Flame Ionization Detectors (HFIDs) must be at their specified operating temperature. One of the following procedures is required for FID or HFID optimization:

(i) The procedure outlined in Society of Automotive Engineers (SAE) paper No. 770141, ''Optimization of a Flame Ionization Detector for Determination of Hydrocarbon in Diluted Automotive Exhausts''; author, Glenn D. Reschke. This procedure has been incorporated by reference. See § 89.6.

(ii) The HFID optimization procedures outlined in 40 CFR 86.331–79.

(iii) Alternative procedures may be used if approved in advance by the Administrator.

(iv) The procedures specified by the manufacturer of the FID or HFID.

* * * * *

(c) *Initial and periodic calibration.* Prior to introduction into service, after any maintenance which could alter calibration, and monthly thereafter, the FID or HFID hydrocarbon analyzer shall be calibrated on all normally used instrument ranges using the steps in this paragraph (c). Use the same flow rate and pressures as when analyzing samples. Calibration gases shall be introduced directly at the analyzer, unless the ''overflow'' calibration option of § 86.1310–90(b)(3)(i) of this chapter for the HFID is taken. New calibration curves need not be generated each month if the existing curve can be verified as continuing to meet the requirements of paragraph (c)(3) of this section.

(1) Adjust analyzer to optimize performance.

(2) Zero the hydrocarbon analyzer with zero-grade air.

(3) Calibrate on each used operating range with propane-in-air (dilute or raw) or propane-in-nitrogen (raw) calibration gases having nominal concentrations starting between 10–15 percent and increasing in at least six incremental steps to 90 percent (e.g., 15, 30, 45, 60, 75, and 90 percent of that range) of that range. The incremental steps are to be spaced to represent good engineering practice. For each range calibrated, if the deviation from a least-squares best-fit straight line is 2 percent or less of the value at each data point, concentration values may be calculated by use of a single calibration factor for that range. If the deviation exceeds 2 percent at each non-zero data point and within ±0.3 percent of full scale on the zero, the best-fit non-linear equation which represents the data to within these limits shall be used to determine concentration.

(d) *Oxygen interference optimization (Required for raw).* Choose a range where the oxygen interference check gases will fall in the upper 50 percent.

Conduct the test, as outlined in this paragraph, with the oven temperature set as required by the instrument manufacturer. Oxygen interference check gas specifications are found in § 89.312(d).

* * * * *

(2) Span the analyzer with the 21% oxygen interference gas specified in § 89.312(d).

* * * * *

(6) Calculate the percent of oxygen interference (designated as percent O_2I) for each mixture in paragraph (d)(4) of this section as follows:

percent $O_2I=((B-C)\times100)/B$

Where:

A= hydrocarbon concentration (ppmC) of the span gas used in paragraph (d)(2) of this section.

B= hydrocarbon concentration (ppmC) of the oxygen interference check gases used in paragraph (d)(4) of this section.

C= analyzer response (ppmC) = A/D.

D= (percent of full-scale analyzer response due to A) × (percent of full-scale analyzer response due to B).

* * * * *

48. The newly designated § 89.320 is amended by revising paragraph (c) to read as follows:

§ 89.320 Carbon monoxide analyzer calibration.

* * * * *

(c) *Initial and periodic calibration.* Prior to its introduction into service, after any maintenance which could alter calibration, and every two months thereafter, the NDIR carbon monoxide analyzer shall be calibrated. New calibration curves need not be generated every two months if the existing curve can be verified as continuing to meet the requirements of paragraph (c)(3) of this section.

(1) Adjust the analyzer to optimize performance.

(2) Zero the carbon monoxide analyzer with either zero-grade air or zero-grade nitrogen.

(3) Calibrate on each used operating range with carbon monoxide-in-N_2 calibration gases having nominal concentrations starting between 10 and 15 percent and increasing in at least six incremental steps to 90 percent (e.g., 15, 30, 45, 60, 75, and 90 percent) of that range. The incremental steps are to be spaced to represent good engineering practice. For each range calibrated, if the deviation from a least-squares best-fit straight line is 2 percent or less of the value at each non-zero data point and within ±0.3 percent of full scale on the zero, concentration values may be calculated by use of a single calibration factor for that range. If the deviation exceeds these limits, the best-fit non-linear equation which represents the data to within these limits shall be used to determine concentration.

* * * * *

49. The newly designated § 89.321 is amended by revising paragraph (c) to read as follows:

§ 89.321 Oxides of nitrogen analyzer calibration.

* * * * *

(c) *Initial and periodic calibration.* Prior to its introduction into service, after any maintenance which could alter calibration, and monthly thereafter, the chemiluminescent oxides of nitrogen analyzer shall be calibrated on all normally used instrument ranges. New calibration curves need not be generated each month if the existing curve can be verified as continuing to meet the requirements of paragraph (c)(3) of this section. Use the same flow rate as when analyzing samples. Proceed as follows:

(1) Adjust analyzer to optimize performance.

(2) Zero the oxides of nitrogen analyzer with zero-grade air or zero-grade nitrogen.

(3) Calibrate on each normally used operating range with NO-in-N_2 calibration gases with nominal concentrations starting at between 10 and 15 percent and increasing in at least six incremental steps to 90 percent (e.g., 15, 30, 45, 60, 75, and 90 percent) of that range. The incremental steps are to be spaced to represent good engineering practice. For each range calibrated, if the deviation from a least-squares best-fit straight line is 2 percent or less of the value at each non-zero data point and within ±0.3 percent of full scale on the zero, concentration values may be calculated by use of a single calibration factor for that range. If the deviation exceeds these limits, the best-fit non-linear equation which represents the data to within these limits shall be used to determine concentration.

* * * * *

50. The newly designated § 89.322 is amended by revising paragraph (a) to read as follows:

§ 89.322 Carbon dioxide analyzer calibration.

(a) Prior to its introduction into service, after any maintenance which could alter calibration, and bi-monthly thereafter, the NDIR carbon dioxide analyzer shall be calibrated on all normally used instrument ranges. New calibration curves need not be generated each month if the existing curve can be verified as continuing to meet the requirements of paragraph (a)(3) of this section. Proceed as follows:

(1) Follow good engineering practices for instrument start-up and operation. Adjust the analyzer to optimize performance.

(2) Zero the carbon dioxide analyzer with either zero-grade air or zero-grade nitrogen.

(3) Calibrate on each normally used operating range with carbon dioxide-in-N_2 calibration or span gases having nominal concentrations starting between 10 and 15 percent and increasing in at least six incremental steps to 90 percent (e.g., 15, 30, 45, 60, 75, and 90 percent) of that range. The incremental steps are to be spaced to represent good engineering practice. For each range calibrated, if the deviation from a least-squares best-fit straight line is 2 percent or less of the value at each non-zero data point and within ±0.3 percent of full scale on the zero, concentration values may be calculated by use of a single calibration factor for that range. If the deviation exceeds these limits, the best-fit non-linear equation which represents the data to within these limits shall be used to determine concentration.

* * * * *

51. The newly designated § 89.324 is revised to read as follows:

§ 89.324 Calibration of other equipment.

(a) Other test equipment used for testing shall be calibrated as often as required by the instrument manufacturer or necessary according to good practice.

(b) If a methane analyzer is used, the methane analyzer shall be calibrated prior to introduction into service and monthly thereafter:

(1) Follow the manufacturer's instructions for instrument startup and operation. Adjust the analyzer to optimize performance.

(2) Zero the methane analyzer with zero-grade air.

(3) Calibrate on each normally used operating range with CH_4 in air with nominal concentrations starting between 10 and 15 percent and increasing in at least six incremental steps to 90 percent (e.g., 15, 30, 45, 60, 75, and 90 percent) of that range. The incremental steps are to be spaced to represent good engineering practice. For each range calibrated, if the deviation from a least-squares best-fit straight line is 2 percent or less of the value at each non-zero data point and within ±0.3 percent of full scale on the zero, concentration values may be calculated by use of a single calibration factor for that range. If the deviation exceeds these limits, the best-fit non-linear equation

which represents the data to within these limits shall be used to determine concentration.

52. The newly designated § 89.328 is amended by revising paragraphs (b)(1) and (b)(2) to read as follows:

§ 89.328 Inlet and exhaust restrictions.

* * * * *

(b) * * *

(1) Equip the test engine with an air inlet system presenting an air inlet restriction within 5 percent of the upper limit at maximum air flow, as specified by the engine manufacturer for a clean air cleaner. A system representative of the installed engine may be used. In other cases a test shop system may be used.

(2) The exhaust backpressure must be within 5 percent of the upper limit at maximum declared power, as specified by the engine manufacturer. A system representative of the installed engine may be used. In other cases a test shop system may be used.

53. The newly designated § 89.330 is amended by revising paragraph (b)(2) to read as follows:

§ 89.330 Lubricating oil and test fuels.

* * * * *

(b) * * *

(2) Use petroleum fuel meeting the specifications in Table 4 in Appendix A of this subpart, or substantially equivalent specifications approved by the Administrator, for exhaust emission testing. Alternatively, petroleum fuel meeting the specifications in Table 5 in Appendix A of this subpart may be used in exhaust emission testing. The grade of diesel fuel used must be commercially designated as ''Type 2–D'' grade diesel fuel and recommended by the engine manufacturer.

* * * * *

54.–57. Tables 1 through 4 of Appendix A to subpart D are revised to read as follows:

Appendix A to Subpart D—Tables

TABLE 1.—ABBREVIATIONS USED IN SUBPART D OF THIS PART

CLD	Chemiluminescent detector.
CO	Carbon monoxide.
CO_2	Carbon dioxide.
HC	Hydrocarbons.
HCLD	Heated chemiluminescent detector.
HFID	Heated flame ionization detector.
GC	Gas chromatograph.
NDIR	Non-dispersive infra-red analyzer.
NIST	National Institute for Standards and Testing.
NO	Nitric Oxide.
NO_2	Nitrogen Dioxide.
NO_X	Oxides of nitrogen.
O_2	Oxygen.

TABLE 2.—SYMBOLS USED IN SUBPARTS D AND E OF THIS PART.

Symbol	Term	Unit
conc	Concentration (ppm by volume).	ppm
f	Engine specific parameter considering atmospheric conditions.	
F_{FCB}	Fuel specific factor for the carbon balance calculation.	
F_{FD}	Fuel specific factor for exhaust flow calculation on dry basis.	
F_{FH}	Fuel specific factor representing the hydrogen to carbon ratio.	
F_{FW}	Fuel specific factor for exhaust flow calculation on wet basis.	
FR	Rate of fuel consumed ..	g/h
G_{AIRW}	Intake air mass flow rate on wet basis.	kg/h
G_{AIRD}	Intake air mass flow rate on dry basis.	kg/h
G_{EXHW} ...	Exhaust gas mass flow rate on wet basis.	kg/h
G_{Fuel}	Fuel mass flow rate	kg/h
H	Absolute humidity (water content related to dry air).	g/kg
i	Subscript denoting an individual mode.	
K_H	Humidity correction factor.	
L	Percent torque related to maximum torque for the test mode.	%

TABLE 2.—SYMBOLS USED IN SUBPARTS D AND E OF THIS PART.—Continued

Symbol	Term	Unit
mass	Pollutant mass flow	g/h
$n_{d,i}$	Engine speed (average at the i'th mode during the cycle).	1/min
P_s	Dry atmospheric pressure.	kPa
P_d	Test ambient saturation vapor pressure at ambient temperature.	kPa
P	Observed brake power output uncorrected.	kW
P_{AUX}	Declared total power absorbed by auxiliaries fitted for the test.	kW
P_M	Maximum power measured at the test speed under test conditions.	kW
P_i	$P_i = P_{M,i} + P_{AUX,i}$	
P_B	Total barometric pressure (average of the pre-test and post-test values).	kPa
P_v	Saturation pressure at dew point temperature.	kPa
R_a	Relative humidity of the ambient air.	%
S	Dynamometer setting	kW
T	Absolute temperature at air inlet.	K
T_{be}	Air temperature after the charge air cooler (if applicable) (average).	K
T_{clout}	Coolant temperature outlet (average).	K
T_{Dd}	Absolute dewpoint temperature.	K
$T_{d,i}$	Torque (average at the i'th mode during the cycle).	N-m
T_{SC}	Temperature of the intercooled air.	K
$T_{ref.}$	Reference temperature ..	K
V_{EXHD}	Exhaust gas volume flow rate on dry basis.	m^3/h
V_{AIRW}	Intake air volume flow rate on wet basis.	m^3/h
P_B	Total barometric pressure.	kPa
V_{EXHW} ...	Exhaust gas volume flow rate on wet basis.	m^3/h
WF	Weighing factor	
WF_E	Effective weighing factor	

TABLE 3.—MEASUREMENT ACCURACY AND CALIBRATION FREQUENCY

No.	Item	Calibration accuracy [1]	Calibration frequency
1	Engine speed	±2%	30 days.
2	Torque	±2%	30 days.
3	Fuel consumption (raw measurement)	±2% of engine maximum	30 days.
4	Air consumption (raw measurement)	±2% of engine maximum	As required.
5	Coolant temperature	±2°K	As required.
6	Lubricant temperature	±2°K	As required.
7	Exhaust backpressure	±0.5%	As required.
8	Inlet depression	±0.5%	As required.
9	Exhaust gas temperature	±15°K	As required.

TABLE 3.—MEASUREMENT ACCURACY AND CALIBRATION FREQUENCY—Continued

No.	Item	Calibration accuracy [1]	Calibration frequency
10	Air inlet temperature (combustion air)	±2°K	As required.
11	Atmospheric pressure	±0.5%	As required.
12	Humidity (combustion air) (relative)	±3.0%	As required.
13	Fuel temperature	±2°K	As required.
14	Temperature with regard to dilution tunnel	±2°K	As required.
15	Dilution air humidity (specific)	±3%	As required.
16	HC analyzer	±2%	Monthly or as required.
17	CO analyzer	±2%	Bi-monthly or as required.
18	NO_X analyzer	±2%	Monthly or as required.
19	Methane analyzer	±2%	Monthly or as required.
20	NO_X converter efficiency check	90%	Monthly.
21	CO_2 analyzer	±2%	Monthly or as required.

[1] All accuracy requirements pertain to the final recorded value which is inclusive of the data acquisition system.

TABLE 4.—FEDERAL TEST FUEL SPECIFICATIONS

Item	Procedure (ASTM) [1]	Value (type 2–D)
Cetane	D613–86	42–48
Distillation Range:		
IPB, °C	D86–90	171–204
10% point, °C	D86–90	204–235
50% point, °C	D86–90	243–283
90% point, °C	D86–90	293–332
EP, °C	D86–90	321–366
Gravity, API	D287–92	33–37
Total sulfur, % mass	D129–91 or D2622–92	>0.05–0.5
Hydrocarbon composition:		
Aromatics, % vol.	D1319–89	[2] 10
Parafins	D1319–89	([3])
Napthenes		
Olefins		
Flashpoint, °C (minimum)	D93–90	54
Viscosity @ 38 °C, centistokes	D445–88	2.0–3.2

[1] All ASTM procedures in this table have been incorporated by reference. See § 89.6.
[2] Minimum.
[3] Remainder.

* * * * *

Appendix A, Table 5 [Amended]

58. Table 5 of Appendix A to subpart D is amended by revising the heading to read as follows:

* * * * *

TABLE 5.—CALIFORNIA TEST FUEL SPECIFICATIONS

* * * * *

Subpart E—[Amended]

59. The newly designated § 89.401 is amended by revising paragraph (b) to read as follows:

§ 89.401 Scope; applicability.

* * * * *

(b) Exhaust gases, either raw or dilute, are sampled while the test engine is operated using the appropriate test cycle on an engine dynamometer. The exhaust gases receive specific component analysis determining concentration of pollutant, exhaust volume, the fuel flow, and the power output during each mode. Emissions are reported as grams per kilowatt hour (g/kW-hr).

* * * * *

60. The newly designated § 89.402 is revised to read as follows:

§ 89.402 Definitions.

The definitions in subpart A of this part apply to this subpart. For terms not defined in this part, the definitions in part 86, subparts A, D, I, and N, of this chapter apply to this subpart.

61. The newly designated § 89.404 is amended by revising paragraph (b) and removing paragraph (e) to read as follows:

§ 89.404 Test procedure overview.

* * * * *

(b) The test is designed to determine the brake-specific emissions of hydrocarbons, carbon monoxide, oxides of nitrogen, and particulate matter. For more information on particulate matter sampling, see § 89.112(c). The test cycles consist of various steady-state operating modes that include different combinations of engine speeds and loads. These procedures require the determination of the concentration of each pollutant, exhaust volume, the fuel flow, and the power output during each mode. The measured values are weighted and used to calculate the grams of each pollutant emitted per kilowatt hour (g/kW-hr).

* * * * *

62. The newly designated § 89.405 is amended by revising paragraphs (d), (e), and (f) to read as follows:

§ 89.405 Recorded information.

* * * * *

(d) Test data; pre-test.

(1) Date and time of day.

(2) Test number.

(3) Intermediate speed and rated speed as defined in § 89.2 and maximum observed torque for these speeds.

(4) Recorder chart or equivalent. Identify for each test segment zero traces for each range used, and span traces for each range used.

(5) Air temperature after and pressure drop across the charge air cooler (if applicable) at maximum observed torque and rated speed.

(e) Test data; modal.

(1) Recorder chart or equivalent. Identify for each test mode the emission concentration traces and the associated analyzer range(s). Identify the start and finish of each test.

(2) Observed engine torque.

(3) Observed engine rpm.

(4) Record engine torque and engine rpm continuously during each mode with a chart recorder or equivalent recording device.

(5) Intake air flow (for raw mass flow sampling method only) and depression for each mode.

(6) Engine intake air temperature at the engine intake or turbocharger inlet for each mode.

(7) Mass fuel flow (for raw sampling) for each mode.

(8) Engine intake humidity.

(9) Coolant temperature outlet.

(10) Engine fuel inlet temperature at the pump inlet.

(f) Test data; post-test.

(1) Recorder chart or equivalent. Identify the zero traces for each range used and the span traces for each range used. Identify hangup check, if performed.

(2) Total number of hours of operation accumulated on the engine.

63. The newly designated § 89.406 is amended by revising paragraphs (b) and (c)(1) to read as follows:

§ 89.406 Pre-test procedures.

* * * * *

(b) Replace or clean the filter elements and then vacuum leak check the system per § 89.316(a). Allow the heated sample line, filters, and pumps to reach operating temperature.

(c) * * *

(1) Check the sample-line temperatures (see § 89.309 (a)(4)(ii) and (a)(5)(i)(A)).

* * * * *

64. The newly designated § 89.407 is amended by revising paragraphs (a), (c), and (d)(2) to read as follows:

§ 89.407 Engine dynamometer test run.

(a) Measure and record the temperature of the air supplied to the engine, the fuel temperature, the intake air humidity, and the observed barometric pressure during the sampling for each mode. The fuel temperature shall be less than or equal to 43 °C during the sampling for each mode.

* * * * *

(c) The following steps are taken for each test:

(1) Install instrumentation and sample probes as required.

(2) Perform the pre-test procedure as specified in § 89.406.

(3) Read and record the general test data as specified in § 89.405(c).

(4) Start cooling system.

(5) Precondition (warm up) the engine in the following manner:

(i) For variable-speed engines:

(A) Operate the engine at idle for 2 to 3 minutes;

(B) Operate the engine at approximately 50 percent power at the peak torque speed for 5 to 7 minutes;

(C) Operate the engine at rated speed and maximum horsepower for 25 to 30 minutes;

(ii) For constant-speed engines:

(A) Operate the engine at minimum load for 2 to 3 minutes;

(B) Operate the engine at 50 percent load for 5 to 7 minutes;

(C) Operate the engine at maximum load for 25 to 30 minutes;

(iii) Optional. It is permitted to precondition the engine at rated speed and maximum horsepower until the oil and water temperatures are stabilized. The temperatures are defined as stabilized if they are maintained within ±2 percent of point on an absolute basis for 2 minutes. The engine must be operated a minimum of 10 minutes for this option. This optional procedure may be substituted for the procedure in paragraph (c)(5)(i)or (c)(5)(ii) of this section;

(iv) Optional. If the engine has been operating on service accumulation for a minimum of 40 minutes, the service accumulation may be substituted for the procedure in paragraphs (c)(5)(i) through (iii) of this section.

(6) Read and record all pre-test data specified in § 89.405(d).

(7) Start the test cycle (see § 89.410) within 20 minutes of the end of the warmup. (See paragraph (c)(13) of this section.) A mode begins when the speed and load requirements are stabilized to within the requirements of § 89.410(b). A mode ends when valid emission sampling for that mode ends. For a mode to be valid, the speed and load requirements must be maintained continuously during the mode. Sampling in the mode may be repeated until a valid sample is obtained as long as the speed and torque requirements are met.

(8) Calculate the torque for any mode with operation at rated speed.

(9) During the first mode with intermediate speed operation, if applicable, calculate the torque corresponding to 75 and 50 percent of the maximum observed torque for the intermediate speed.

(10) Record all modal data specified in § 89.405(e) during a minimum of the last 60 seconds of each mode.

(11) Record the analyzer(s) response to the exhaust gas during the minimum of the last 60 seconds of each mode.

(12) Test modes may be repeated, as long as the engine is preconditioned by running the previous mode. In the case of the first mode of any cycle, precondition according to paragraph (c)(5) of this section.

(13) If a delay of more than 20 minutes, but less than 4 hours, occurs between the end of one mode and the beginning of another mode, precondition the engine by running the previous mode. If the delay exceeds 4 hours, the test shall include preconditioning (begin at paragraph (c)(2) of this section).

(14) The speed and load points for each mode are listed in Tables 1 through 4 of Appendix B of this subpart. The engine speed and load shall be maintained as specified in § 89.410(b).

(15) If at any time during a test mode, the test equipment malfunctions or the specifications in paragraph (c)(14) of this section are not met, the test mode is void and may be aborted. The test mode may be restarted by preconditioning with the previous mode.

(16) Fuel flow and air flow during the idle load condition may be determined just prior to or immediately following the dynamometer sequence, if longer times are required for accurate measurements.

(d) * * *

(2) Each analyzer range that may be used during a test mode must have the zero and span responses recorded prior to the execution of the test . Only the zero and span for the range(s) used to measure the emissions during the test are required to be recorded after the completion of the test .

* * * * *

65. The newly designated § 89.408 is amended by revising paragraph (e) to read as follows:

§ 89.408 Post-test procedures.

* * * * *

(e) For a valid test, the zero and span checks performed before and after each test for each analyzer must meet the following requirements:

(1) The span drift (defined as the change in the difference between the zero response and the span response) must not exceed 3 percent of full-scale chart deflection for each range used.

(2) The zero response drift must not exceed 3 percent of full-scale chart deflection.

66. The newly designated § 89.410 is amended by revising paragraphs (a), (b), and (c) to read as follows:

§ 89.410 Engine test cycle.

(a) *Test cycles.* The manufacturer shall determine from of the following test cycles the most appropriate cycle for each engine family using the following guidelines. These cycles shall be used to test engines on a dynamometer.

(1) The 8-mode test cycle described in Table 1 of Appendix B of this subpart may be used for any land-based or auxiliary marine diesel engine.

(2) The 5-mode test cycle described in Table 2 of Appendix B of this subpart may be used for any constant-speed engine (see § 89.2). Any engine certified under this test cycle must meet the labeling requirements of § 89.110(b)(11).

(3) The 6-mode test cycle described in Table 3 of Appendix B of this subpart may be used for any land-based or auxiliary marine diesel engine rated under 19 kW.

(4) The 4-mode test cycle described in Table 4 of Appendix B of this subpart is intended for all propulsion marine diesel engines. Manufacturers may measure emissions from propulsion marine diesel engines using the 8-mode test cycle described in Table 1 of Appendix B of this subpart if the engine has been derived from a model already certified with that cycle, if approved in advance by the Administrator.

(b) During each non-idle mode, hold the specified load to within 2 percent of the engine maximum value and speed to within ±2 percent of point. During each idle mode, speed must be held within the manufacturer's specifications for the engine, and the throttle must be in the fully closed position and torque must not exceed 5 percent of the peak torque value of mode 5.

(c) For any mode except those involving either idle or full-load operation, if the operating conditions specified in paragraph (b) of this section cannot be maintained, the Administrator may authorize deviations from the specified load conditions. Such deviations shall not exceed 10 percent of the maximum torque at the test speed. The minimum deviations above and below the specified load necessary for stable operation shall be determined by the manufacturer and approved by the Administrator prior to the test run.

* * * * *

67. The newly designated § 89.411 is amended by revising paragraph (e)(5) to read as follows:

§ 89.411 Exhaust sample procedure—gaseous components.

* * * * *

(e) * * *

(5) If the difference between the readings obtained is 2 percent of full scale deflection or more, clean the sample probe and the sample line.

* * * * *

68. The newly designated § 89.412 is amended by revising paragraph (c)(3) and removing and reserving paragraph (g)(1) to read as follows:

§ 89.412 Raw gaseous exhaust sampling and analytical system description.

* * * * *

(c) * * *

(3) The location of optional valve V16 may not be greater than 61 cm from the sample pump.

* * * * *

(g) * * *

(1) [Reserved]

* * * * *

69. The newly designated § 89.413 is amended by revising paragraph (d) and removing paragraph (e) to read as follows:

§ 89.413 Raw sampling procedures.

* * * * *

(d) All heated sampling lines shall be fitted with a heated filter to extract solid particles from the flow of gas required for analysis. The sample line for CO and CO_2 analysis may be heated or unheated.

70. The newly designated § 89.414 is amended by revising paragraph (a) to read as follows:

§ 89.414 Air flow measurement specifications.

(a) The air flow measurement method used must have a range large enough to accurately measure the air flow over the engine operating range during the test. Overall measurement accuracy must be ±2 percent of the maximum engine value for all modes. The Administrator must be advised of the method used prior to testing.

* * * * *

71. The newly designated § 89.415 is revised to read as follows:

§ 89.415 Fuel flow measurement specifications.

The fuel flow rate measurement instrument must have a minimum accuracy of 2 percent of the engine maximum fuel flow rate. The controlling parameters are the elapsed time measurement of the event and the weight or volume measurement.

72. The newly designated § 89.418 is amended by revising paragraphs (c) and (d), the table in paragraph (e), paragraphs (f) introductory text and (f)(1), and the text of paragraph (g) preceding the equation to read as follows:

§ 89.418 Raw emission sampling calculations.

* * * * *

(c) When applying G_{EXHW} the measured ''dry'' concentration shall be corrected to a wet basis, if not already measured on a wet basis. This section is applicable only for measurements made on raw exhaust gas. Correction to a wet basis shall be according to the following formula:

$Conc_{WET} = K_W \times Conc_{''dry''}$

Where:

K_W is determined according to the equations in paragraphs (c)(1), (c)(2), and (c)(3) of this section.

(1) For measurements using the mass flow method (see § 89.416(a)):

$$K_W = \left[1 - F_{FH} \times \frac{G_{fuel}}{G_{aird}}\right] - K_{W1} \quad \text{only applicable for raw exhaust}$$

$$F_{FH} = ALF \times 0.1448 \times \frac{1}{1 + \left(\frac{G_{fuel}}{G_{airw}}\right)} \quad \text{for diesel fuel only}$$

ALF=Hydrogen mass percentage of fuel = 13.12 for $CH_{1.8}$ fuel.

$$ALF = \frac{1.008 \times \alpha}{12.01 + 1.008 \times \alpha} \times 100$$

α=H/C mole ratio of the fuel.

(2) For measurements using the fuel consumption and exhaust gas concentrations method (see § 89.416(b)):

$$K_W = \frac{1}{1 + 1.8 \times 0.005 \times \left[\frac{DCO}{10^4} + DCO_2\right]} - K_{W1}$$

$$\left(\frac{f}{a}\right) = \frac{4.77(1 + \alpha/4)(f/a)\,\text{stoich}}{\frac{1}{X}\left[\frac{DCO}{2 \times (10)^6}\right] - \left(\frac{DHC}{\times (10)^6}\right) + \frac{\alpha}{4}\left(1 - \frac{DHC}{\times (10)^6}\right) - \frac{.75\alpha}{\left(\frac{K}{\frac{DCO}{\times (10)^6}}\right) + \left(\frac{(1-K)}{1 - \frac{DHC}{\times (10)^6}}\right)}}$$

or

$$\left(\frac{f}{a}\right) = \frac{G_{fuel}}{G_{aird}} = \frac{\text{Mass Fuel Measured}}{G_{airw} \times \left(1 - \frac{H}{1000}\right)}$$

K=3.5

$$X = \frac{DCO_2}{10^2} + \frac{DCO}{10^6} + \frac{DHC}{10^6}$$

$$(f/a)\text{Stoich} = \frac{M_{c+}\alpha M_H}{138.18(1 + \alpha/4)}$$

(3) For both methods, H is calculated as specified in paragraph (d)(1) of this section:

$$K_{W1} = \frac{1.608 \times H}{1000 + 1.608 \times H}$$

(d) As the NO_X emission depends on intake air conditions, the NO_X concentration shall be corrected for intake air temperature and humidity with the factor K_H given in the following formula. For engines operating on alternative combustion cycles, other correction formulas may be used if they can be justified or validated. The formula follows:

$$K_H = \frac{1}{1 + A(H - 10.71) + B(T - 298)}$$

Where:

A=0.309 (f/a)–0.0266

B= − 0.209 (f/a)+0.00954

T=temperature of the air in K

H=humidity of the inlet air in grams of water per kilogram of dry air, in which:

$$H = \frac{6.22 \times R_a \times p_d}{p_R - \left(p_d \times R_a \times 10^{-2}\right)}$$

or

$$H = \frac{622 \times P_v}{\left(P_B - P_v\right)}$$

(e) * * *

Gas	u	v	w	Conc.
NO_X	0.001587	0.00205	0.00205	ppm.
CO	0.000966	0.00125	0.00125	ppm.
HC	0.000478	—	0.000618	ppm.
CO_2	15.19	19.64	19.64	Percent.

NOTE: The given coefficients u, v, and w are calculated for 273.15 °K (0 °C) and 101.3 kPa. In cases where the reference conditions vary from those stated, an error may occur in the calculations.

(f) The following equations may be used to calculate the coefficients u, v, and w in paragraph (e) of this section for other conditions of temperature and pressure:

(1) For the calculation of u, v, and w for NO_X (as NO_2), CO, HC (in paragraph (e) of this section as $CH_{1.80}$), CO_2, and O_2:

Where:

$w=4.4615.10^{-5}\times M$ if conc. in ppm

$w=4.4615.10^{-1}\times M$ if conc. in percent

$v=w$

$u=w/\rho_{Air}$

M=Molecular weight

ρ_{Air}=Density of dry air at 273.15 °K (0 °C), 101.3 kPa=1.293 kg/m^3

* * * * *

(g) The emission shall be calculated for all individual components in the following way where power at idle is equal to zero:

* * * * *

§ 89.423 [Removed and reserved]

73. Remove and reserve the newly designated § 89.423.

74. The newly designated § 89.424 is amended by revising paragraphs (a), (d)(6), and (e) to read as follows:

§ 89.424 Dilute emission sampling calculations.

(a) The final reported emission test results are computed by use of the following formula:

$$A_{WM} = \frac{\sum_{i=1}^{i=n}\left(g_i \times WF_i\right)}{\sum_{i=1}^{i=n-1}\left(P_i \times WF_i\right)}$$

Where:

A_{wm}=Weighted mass emission level (HC, CO, CO_2, PM, or NO_X) in g/kW-hr.

g_i=Mass flow in grams per hour, = grams measured during the mode divided by the sample time for the mode.

WF_i=Effective weighing factor.

P_i=Power measured during each mode (Power set = zero for the idle mode)

* * * * *

(d) * * *

(6) Equations for H and K_H are found in § 89.418.

Wet concentration = Kw X dry concentration

Where:

Kw=

$1-(\alpha/200)\times CO_{2e}(') - ((1.608\times H)/(7000+1.608\times H))$, or

$1-(\alpha/200)\times CO_{2e}(') - ((1.608\times H)/(1000+1.608\times H))$

for SI units.

$CO_{2e}(')$ = either CO_{2e} or CO_{2e}' as applicable.

CO_{2e} (') = average intergrated carbon dioxide concentration (wet basis) in percent (for continuous measurement).

(e) The final modal reported brake-specific fuel consumption (bsfc) shall be computed by use of the following formula:

$$bsfc = \frac{M}{kW - hr}$$

Where:

bsfc = brake-specific fuel consumption for a mode in grams of fuel per kilowatt-hour (kW-hr).

M = mass of fuel in grams, used by the engine during a mode.

kW-hr = total kilowatts integrated with respect to time for a mode.

* * * * *

§ 89.425 [Removed and reserved]

75. Remove and reserve the newly designated § 89.425.

76.–80. Appendix B to subpart E of part 89 is revised to read as follows:

Appendix B to Subpart E of Part 89—Tables

TABLE 1.—8-MODE TEST CYCLE FOR VARIABLE-SPEED ENGINES

Test segment	Mode No.	Engine speed [1]	Observed torque [2] (percent of max. observed)	Minimum time in mode (minutes)	Weighting factors
1	1	Rated	100	5.0	0.15
1	2	Rated	75	5.0	.15
1	3	Rated	50	5.0	.15
1	4	Rated	10	5.0	.10
2	5	Int	100	5.0	.10
2	6	Int	75	5.0	.10
2	7	Int	50	5.0	.10

TABLE 1.—8-MODE TEST CYCLE FOR VARIABLE-SPEED ENGINES—Continued

Test segment	Mode No.	Engine speed [1]	Observed torque [2] (percent of max. observed)	Minimum time in mode (minutes)	Weighting factors
2	8	Idle	0	5.0	.15

[1] Engine speed (non-idle): ±2 percent of point. Engine speed (idle): Within manufacturer's specifications. Idle speed is specified by the manufacturer.
[2] Torque (non-idle): Throttle fully open for 100 percent points. Other non-idle points: ±2 percent of engine maximum value. Torque (idle): Throttle fully closed. Load less than 5 percent of peak torque.

TABLE 2.—5-MODE TEST CYCLE FOR CONSTANT-SPEED ENGINES

Mode No.	Engine speed [1]	Observed torque [2] (percent of max. observed)	Minimum time in mode (minutes)	Weighting factors
1	Rated	100	5.0	0.05
2	Rated	75	5.0	0.25
3	Rated	50	5.0	0.30
4	Rated	25	5.0	0.30
5	Rated	10	5.0	0.10

[1] Engine speed: ±2 percent of point.
[2] Torque: Throttle fully open for 100 percent point. Other points: ±2 percent of engine maximum value.

TABLE 3.—6-MODE TEST CYCLE FOR ENGINES RATED UNDER 19 kW

Mode No.	Engine speed [1]	Observed torque [2] (percent of max. observed)	Minimum time in mode (minutes)	Weighting factors
1	Rated	100	5.0	0.09
2	Rated	75	5.0	.20
3	Rated	50	5.0	.29
4	Rated	25	5.0	.30
5	Rated	10	5.0	.07
6	Idle	0	5.0	.05

[1] Engine speed (non-idle): ±2 percent of point. Engine speed (idle): Within manufacturer's specifications. Idle speed is specified by the manufacturer.
[2] Torque (non-idle): Throttle fully open for operation at 100 percent point. Other nonidle points: ± 2 percent of engine maximum value. Torque (idle): Throttle fully closed. Load less than 5 percent of peak torque.

TABLE 4.—4-MODE TEST CYCLE FOR PROPULSION MARINE DIESEL ENGINES

Mode No.	Engine speed [1] (percent of max. observed)	Observed power [2] (percent of max. observed)	Minimum time in mode (minutes)	Weighting factors
1	100	100	5.0	020
2	91	75	5.0	.50
3	80	50	5.0	.15
4	63	10	5.0	.15

[1] Engine speed: ±2 percent of point.
[2] Power: Throttle fully open for operation at 100 percent point. Other points: ±2 percent of engine maximum value.

Subpart F—[Amended]

81. The newly designated § 89.505 is amended by revising paragraph (e) to read as follows:

§ 89.505 Maintenance of records; submittal of information.

* * * * *

(e) All reports, submissions, notifications, and requests for approvals made under this subpart are addressed to: Director, Engine Programs and Compliance Division (6405–J), U.S. Environmental Protection Agency, 401 M Street SW, Washington, DC 20460.

82. The newly designated § 89.506 is amended by revising paragraph (g) to read as follows:

§ 89.506 Right of entry and access.

* * * * *

(g) A manufacturer is responsible for locating its foreign testing and manufacturing facilities in jurisdictions where local law does not prohibit an EPA enforcement officer(s) or EPA authorized representative(s) from conducting the entry and access activities specified in this section. EPA will not attempt to make any inspections which it has been informed that local foreign law prohibits.

83. The newly designated § 89.509 is amended by revising paragraphs (a) and (b) to read as follows:

§ 89.509 Calculation and reporting of test results.

(a) Initial test results are calculated following the applicable test procedure specified in § 89.508(a). The manufacturer rounds these results, in accordance with ASTM E29–93a, to the number of decimal places contained in the applicable emission standard expressed to one additional significant figure. This procedure has been incorporated by reference. See § 89.6.

(b) Final test results are calculated by summing the initial test results derived in paragraph (a) of this section for each test engine, dividing by the number of tests conducted on the engine, and rounding in accordance with the procedure specified in paragraph (a) of this section to the same number of decimal places contained in the applicable standard expressed to one additional significant figure.

* * * * *

84. The newly designated § 89.512 is amended by revising paragraph (b) to read as follows:

§ 89.512 Request for public hearing.

* * * * *

(b) The manufacturer's request must be filed with the Administrator not later than 15 days after the Administrator's notification of the decision to suspend or revoke, unless otherwise specified by the Administrator. The manufacturer must simultaneously serve two copies of this request upon the Director of the Engine Programs and Compliance Division and file two copies with the Hearing Clerk of the Agency. Failure of the manufacturer to request a hearing within the time provided constitutes a waiver of the right to a hearing. Subsequent to the expiration of the period for requesting a hearing as of right, the Administrator may, at her or his discretion and for good cause shown, grant the manufacturer a hearing to contest the suspension or revocation.

* * * * *

85. The newly designated § 89.513 is amended by revising paragraph (e)(2) to read as follows.

§ 89.513 Administrative procedures for public hearing.

* * * * *

(e) * * *

(2) To the maximum extent possible, testimony will be presented in written form. Copies of written testimony will be served upon all parties as soon as practicable prior to the start of the hearing. A certificate of service will be provided on or accompany each document or paper filed with the Hearing Clerk. Documents to be served upon the Director of the Engine Programs and Compliance Division must be sent by registered mail to: Director, Engine Programs and Compliance Division (6405–J), U.S. Environmental Protection Agency, 401 M Street SW, Washington, DC 20460. Service by registered mail is complete upon mailing.

* * * * *

Subpart G—[Amended]

86. The newly designated § 89.602 is amended by revising the definition for ''Fifteen working day hold period'' to read as follows:

§ 89.602 Definitions.

* * * * *

Fifteen working day hold period. The period of time between a request for final admission and the automatic granting of final admission (unless EPA intervenes) for a nonconforming nonroad engine conditionally imported pursuant to § 89.605 or § 89.609. Day one of the hold period is the first working day (see definition for ''working day'' in this section) after the Engine Programs and Compliance Division of EPA receives a complete and valid application for final admission.

* * * * *

87. The newly designated § 89.603 is amended by revising paragraph (d) to read as follows:

§ 89.603 General requirements for importation of nonconforming nonroad engines.

* * * * *

(d) The ICI must submit to the Engine Programs and Compliance Division of EPA a copy of all approved applications for certification used to obtain certificates of conformity for the purpose of importing nonconforming nonroad engines pursuant to § 89.605 or § 89.609. In addition, the ICI must submit to the Engine Programs and Compliance Division a copy of all approved production changes implemented pursuant to § 89.605 or subpart B of this part. Documentation submitted pursuant to this paragraph must be provided to the Engine Programs and Compliance Division within 10 working days of approval of the certification application (or production change) by EPA.

88. The newly designated § 89.604 is amended by revising paragraphs (c)(4) and (d) to read as follows:

§ 89.604 Conditional admission.

* * * * *

(c) * * *

(4) A copy of the written record is to be submitted to the Engine Programs and Compliance Division of EPA within five working days of the transfer date.

(d) Notwithstanding any other requirement of this subpart or U.S. Customs Service regulations, an ICI may also assume responsibility for the modification and testing of a nonconforming nonroad engine which was previously imported by another party. The ICI must be a holder of a currently valid certificate of conformity for that specific nonroad engine or authorized to import it pursuant to § 89.609 at the time of assuming such responsibility. The ICI must comply with all the requirements of § 89.603, § 89.604, and either § 89.605 or § 89.609, as applicable. For the purposes of this subpart, the ICI has ''imported'' the nonroad engine as of the date the ICI assumes responsibility for the modification and testing of the nonroad engine. The ICI must submit written notification to the Engine Programs and Compliance Division of EPA within 10 working days of the assumption of that responsibility.

89. The newly designated § 89.605 is amended by revising paragraphs (a)(2)(i), (a)(3)(vi), and (c) to read as follows:

§ 89.605 Final admission of certified nonroad engines.

(a) * * *

(2) * * *

(i) The ICI attests that the nonroad engine has been modified in accordance with the provisions of the ICI's certificate of conformity; presents to EPA a statement written by the applicable Original Engine Manufacturer (OEM) that the OEM must provide to the ICI, and to EPA, information concerning production changes to the class of nonroad engines described in the ICI's application for certification; delivers to the Engine Programs and Compliance Division of EPA notification by the ICI of any production changes already implemented by the OEM at the time of application and their effect on emissions; and obtains from EPA

written approval to use this demonstration option; or

* * * * *

(3) * * *

(vi) A report concerning these production changes is to be made to the Engine Programs and Compliance Division of EPA within ten working days of initiation of the production change. The cause of any failure of an emission test is to be identified, if known;

* * * * *

(c) Except as provided in paragraph (b) of this section, EPA approval for final admission of a nonroad engine under this section is presumed to have been granted if the ICI does not receive oral or written notice from EPA to the contrary within 15 working days of the date that the Engine Programs and Compliance Division of EPA receives the ICI's application under paragraph (a) of this section. EPA notice of nonapproval may be made to any employee of the ICI. It is the responsibility of the ICI to ensure that the Engine Programs and Compliance Division of EPA receives the application and to confirm the date of receipt. During this 15 working day hold period, the nonroad engine is to be stored at a location where the Administrator has reasonable access to the nonroad engine for the Administrator's inspection. The storage is to be within 50 miles of the ICI's testing facility to allow the Administrator reasonable access for inspection and testing. A storage facility not meeting this criterion must be approved in writing by the Administrator prior to the submittal of the ICI's application under paragraph (a) of this section.

90. The newly designated § 89.609 is amended by revising paragraph (d) to read as follows:

§ 89.609 Final admission of modification nonroad engines and test nonroad engines.

* * * * *

(d) Except as provided in paragraph (c) of this section, EPA approval for final admission of a nonroad engine under this section is presumed to have been granted if the ICI does not receive oral or written notice from EPA to the contrary within 15 working days of the date that the Engine Programs and Compliance Division of EPA receives the ICI's application under paragraph (b) of this section. Such EPA notice of nonapproval may be made to any employee of the ICI. It is the responsibility of the ICI to ensure that the Engine Programs and Compliance Division of EPA receives the application and to confirm the date of receipt. During this 15 working day hold period, the nonroad engine is stored at a location where the Administrator has reasonable access to the nonroad engine for the Administrator's inspection. The storage is to be within 50 miles of the ICI's testing facility to allow the Administrator reasonable access for inspection and testing. A storage facility not meeting this criterion must be approved in writing by the Administrator prior to the submittal of the ICI's application under paragraph (b) of this section.

* * * * *

91. The newly designated § 89.610 is amended by revising paragraph (b)(1) to read as follows:

§ 89.610 Maintenance instructions, warranties, emission labeling.

* * * * *

(b) *Warranties.* (1) ICIs must submit to the Engine Programs and Compliance Division of EPA sample copies (including revisions) of any warranty documents required by this section prior to importing nonroad engines under this subpart.

* * * * *

92. The newly designated § 89.611 is amended by revising paragraph (g) to read as follows:

§ 89.611 Exemptions and exclusions.

* * * * *

(g) An application for exemption and exclusion provided for in paragraphs (b), (c), and (e) of this section is to be mailed to: U.S. Environmental Protection Agency, Office of Mobile Sources, Engine Programs and Compliance Division (6405–J), 401 M Street, SW., Washington, DC 20460, Attention: Imports.

Subpart J—[Amended]

93. Section 89.903 is amended by revising paragraph (b) to read as follows:

§ 89.903 Application of section 216(10) of the Act.

* * * * *

(b) EPA will maintain a list of nonroad engines that have been determined to be excluded because they are used solely for competition. This list will be available to the public and may be obtained by writing to the following address: Chief, Selective Enforcement Auditing Section, Engine Programs and Compliance Division (6405–-J), Environmental Protection Agency, 401 M Street SW, Washington, DC 20460.

* * * * *

94. Section 89.905 is amended by revising paragraph (f) to read as follows:

§ 89.905 Testing exemption.

* * * * *

(f) A manufacturer of new nonroad engines may request a testing exemption to cover nonroad engines intended for use in test programs planned or anticipated over the course of a subsequent one-year period. Unless otherwise required by the Director, Engine Programs and Compliance Division, a manufacturer requesting such an exemption need only furnish the information required by paragraphs (a)(1) and (d)(2) of this section along with a description of the record-keeping and control procedures that will be employed to assure that the engines are used for purposes consistent with paragraph (a) of this section.

95. Section 89.906 is amended by revising paragraphs (a)(3) introductory text, (a)(3)(iii)(D), and (b) to read as follows:

§ 89.906 Manufacturer-owned exemption and precertification exemption.

(a) * * *

(3) Unless the requirement is waived or an alternate procedure is approved by the Director, Engine Programs and Compliance Division, the manufacturer must permanently affix a label to each nonroad engine on exempt status. This label should—

* * * * *

(iii) * * *

(D) The statement ''This nonroad engine is exempt from the prohibitions of 40 CFR 89.1003.''

* * * * *

(b) Any independent commercial importer that desires a precertification exemption pursuant to § 89.611(b)(3) and is in the business of importing, modifying, or testing uncertified nonroad engines for resale under the provisions of subpart G of this part, must apply to the Director, Engine Programs and Compliance Division. The Director may require such independent commercial importer to submit information regarding the general nature of the fleet activities, the number of nonroad engines involved, and a demonstration that adequate record-keeping procedures for control purposes will be employed.

96. Section 89.911 is revised to read as follows:

§ 89.911 Submission of exemption requests.

Requests for exemption or further information concerning exemptions and/or the exemption request review procedure should be addressed to: Chief, Selective Enforcement Auditing Section, Engine Programs and Compliance Division (6405–J), Environmental Protection Agency, 401 M Street SW, Washington, DC 20460.

97. Section 89.1003 is amended by revising paragraphs (a)(3), (a)(5), (a)(6), and (b)(4) to read as follows:

§ 89.1003 Prohibited acts.

(a) * * *

(3)(i) For a person to remove or render inoperative a device or element of design installed on or in a nonroad engine, vehicle or equipment in compliance with regulations under this part prior to its sale and delivery to the ultimate purchaser, or for a person knowingly to remove or render inoperative such a device or element of design after the sale and delivery to the ultimate purchaser; or

(ii) For a person to manufacture, sell or offer to sell, or install, a part or component intended for use with, or as part of, a nonroad engine, vehicle or equipment, where a principal effect of the part or component is to bypass, defeat, or render inoperative a device or element of design installed on or in a nonroad engine in compliance with regulations issued under this part, and where the person knows or should know that the part or component is being offered for sale or installed for this use or put to such use; or

(iii) for a person to deviate from the provisions of § 89.130 when rebuilding an engine (or rebuilding a portion of an engine or engine system).

* * * * *

(5) For a person to circumvent or attempt to circumvent the residence time requirements of paragraph (2)(iii) of the nonroad engine definition in § 89.2.

(6) For a manufacturer of nonroad vehicles or equipment to distribute in commerce, sell, offer for sale, or introduce into commerce a nonroad vehicle or piece of equipment, manufactured on or after the model year applicable to engines in such vehicle or equipment under § 89.112, which contains an engine not covered by a certificate of conformity.

(b) * * *

(4) Certified nonroad engines shall be used in all vehicles and equipment manufactured on or after the applicable model years in § 89.112 that are self-propelled, portable, transportable, or are intended to be propelled while performing their function, unless the manufacturer of the vehicle or equipment can prove that the vehicle or equipment will be used in a manner consistent with paragraph (2) of the definition of nonroad engine in § 89.2. For any model year for which a new standard takes effect, nonroad vehicle and equipment manufacturers may continue to use previous model year nonroad engines until inventories of those engines are depleted; however, stockpiling of noncertified nonroad engines will be considered a violation of this section.

98. Section 89.1007 is amended by revising paragraph (c) to read as follows:

§ 89.1007 Warranty provisions.

* * * * *

(c) For the purposes of this section, the owner of any nonroad engine warranted under this part is responsible for the proper maintenance of the engine. Proper maintenance includes replacement and service, at the owner's expense at a service establishment or facility of the owner's choosing, of all parts, items, or devices related to emission control (but not designed for emission control) under the terms of the last sentence of section 207(a)(3) of the Act, unless such part, item, or device is covered by any warranty not mandated by this Act.

[FR Doc. 97–24237 Filed 9–23–97; 8:45 am]

BILLING CODE 6560–50–P

Federal Register

Wednesday
September 24, 1997

Part V

Department of Transportation

Research and Special Programs Administration

49 CFR Part 171 et al.

Transportation of Hazardous Materials; Miscellaneous Amendments; Proposed Rule

DEPARTMENT OF TRANSPORTATION

Research and Special Programs Administration

49 CFR Parts 171, 172, 173, 175, 177, 178 and 180

[Docket No. RSPA–97–2905 (HM–166Y)]

RIN 2137–AC41

Transportation of Hazardous Materials; Miscellaneous Amendments

AGENCY: Research and Special Programs Administration (RSPA), DOT.

ACTION: Notice of proposed rulemaking (NPRM).

SUMMARY: RSPA proposes to make miscellaneous amendments to the Hazardous Materials Regulations (HMR) based on petitions for rulemaking and RSPA initiative. These proposed amendments are intended to update, clarify or provide relief from certain regulatory requirements.

DATES: Comments must be received by November 24, 1997.

ADDRESSES: Address comments to the Dockets Unit, U.S. Department of Transportation, Room PL 401, 400 Seventh St., SW., Washington, DC 20590–0001. Comments should identify the docket number, RSPA–97–2905 (HM–166Y) and should be submitted in two copies. Persons wishing to receive confirmation of receipt of their comments should include a self-addressed stamped postcard. Comments may also be submitted by E-mail to rules@rspa.dot.gov. The Dockets Office is located on the Plaza Level of the Nassif Building at the U.S. Department of Transportation at the above address. Public dockets may be reviewed between the hours of 10:00 a.m. and 5:00 p.m., Monday through Friday, except on Federal holidays.

FOR FURTHER INFORMATION CONTACT: Joan McIntyre, Office of Hazardous Materials Standards, Research and Special Programs Administration, U.S. Department of Transportation, 400 Seventh Street, SW., Washington, DC 20590–0001, telephone (202) 366–8553.

SUPPLEMENTARY INFORMATION:

Background

This notice of proposed rulemaking (NPRM) is designed primarily to reduce regulatory burdens on industry by incorporating changes into the HMR based on RSPA's own initiative and petitions for rulemaking submitted in accordance with 49 CFR 106.31. This NPRM also is consistent with the goals of the President's Regulatory Reinvention Initiative. On March 4, 1995, the President directed Federal agencies to perform an extensive review of all agency regulations and eliminate or revise those requirements that are outdated or in need of reform. In a continuing effort to review the HMR for necessary revisions, RSPA is also proposing to eliminate, revise, clarify and relax certain other regulatory requirements.

The following is a section-by-section summary of the proposed changes under this notice of proposed rulemaking.

Section-by-Section Review

Part 171

Section 171.7

The Association of American Railroads (AAR) (P–1315) requested that RSPA update the incorporation by reference of the AAR manual, ''AAR Manual of Standards and Recommended Practices, Section C–Part III, Specifications for Tank Cars, Specification M–1002,'' from the 1992 edition to the 1996 edition. RSPA and the Federal Railroad Administration have reviewed the reference requirements in the 1996 manual and have determined that there are no substantive changes. Therefore, RSPA proposes to incorporate the 1996 edition by reference into the HMR.

Section 171.8

RSPA proposes to add a definition for ''self-defense spray'' to correspond with the proposed new entry, ''Self-defense sprays, non-pressurized, *containing not more than 2 percent tear gas substances,*'' Class 9. (See § 172.101.) RSPA specifically solicits comments on the use and scope of the word ''animal'' when defining a self-defense spray as having an irritating or incapacitating effect on a person or animal.

RSPA proposes to revise the definition of ''Marine pollutant'' by adding a reference to § 171.4, containing the marine pollutant requirements, to facilitate its location by readers. This proposal responds to a petitioner (P–1256) who stated that the exceptions contained in § 171.4 are often overlooked.

Section 171.18

Section 171.18 would be removed and reserved in order to delete an obsolete section concerning registrations filed with the Bureau of Explosives.

Section 171.19

RSPA proposes to revise § 171.19 to terminate all remaining Bureau of Explosives (BOE) approvals, other than those made under approval provisions in Part 179. Since 1979, approvals, authorizations and registrations issued by the BOE have continued in effect as if issued by the Associate Administrator for Hazardous Materials Safety. Over the years, the regulations on which these BOE approvals were based have been revised or eliminated. The majority of these BOE approvals have been converted to approvals issued by the Associate Administrator for Hazardous Materials Safety (AAHMS). RSPA believes that the remaining BOE approvals are obsolete and proposes to terminate them. Any person holding a BOE approval who is affected by this termination may file a request for issuance of a new approval by the AAHMS.

Part 172

Section 172.101

RSPA proposes to add two new entries to the Hazardous Materials Table (HMT) and to amend two current entries.

To clarify that both the aerosol and non-aerosol self-defense sprays are subject to the regulations, RSPA proposes to add two new entries, ''*Self-defense sprays, aerosol containing not more than 2% tear gas substances, see* Aerosols'' and ''Self-defense sprays, non-pressurized, *containing not more than 2 percent tear gas substances*'' to the HMT. The Federal Aviation Administration (FAA) has encountered numerous problems with airline passengers attempting to carry on their persons self-defense sprays, such as mace and pepper spray, having an irritating or incapacitating effect. The Federal Aviation Regulations (14 CFR 107.21 and 108.11) prohibit the possession of ''deadly or dangerous weapons'' on one's person or in carry-on baggage aboard aircraft. ''Deadly or dangerous weapons'' include disabling or incapacitating items such as tear gas, mace, pepper spray and similar chemicals and gases. The spray from these devices is released from either an aerosol or a pump. The aerosol type sprays are to be transported as aerosols. The HMT currently includes the entry, ''Tear gas devices, *with not more than 2 percent tear gas substances, by mass,*'' which references the entry for aerosols. RSPA is aware of misunderstanding as to how these materials are classed and described under the HMR. Both definitions for Class 6 and Class 9 address irritating materials, but do not specify criteria. Also, there is no specific entry for devices that are not aerosols. In cases where the substance contained in a device does not meet the criteria of any of Classes 1 through 8,

there has been uncertainty as to whether they are subject to the regulations.

RSPA regards self-defense sprays which do not meet toxicity criteria for Class 6 as meeting the criterion for Class 9 given in § 173.140 (i.e., they could cause extreme annoyance or discomfort to a flight crew member so as to prevent the correct performance of assigned duties) and is adding an entry in the HMT to regulate them for transportation by aircraft only.

Consistent with the entry for ''Tear gas devices, *with not more than 2 percent tear gas substances, by mass,*'' RSPA proposes to add a new entry ''*Self-defense sprays, aerosol containing not more than 2% tear gas substances,*'' which will refer to aerosols. RSPA also proposes to add a new entry ''Self-defense sprays, non-pressurized, *containing not more than 2 percent tear gas substances,*'' Class 9, which would be assigned the identification number NA3334. This number corresponds to a newly created UN entry, UN3334, ''Aviation regulated liquid, n.o.s.'' which RSPA will propose for inclusion in the HMR in a later proposal to implement changes introduced in the tenth revised edition of the UN Recommendations. Related changes are proposed to § 171.8 to add a definition for self-defense sprays and to § 175.10 to clarify that these items are not allowed to be carried in the passenger compartment of an aircraft and provide for carriage of a device by a passenger in checked baggage.

RSPA proposes to amend the entry, ''Detonators, non-electric *for blasting,*'' UN0455 in Column (8A), by correcting the erroneous reference ''none'' for packaging exceptions to read ''63(f), 63(g).''

RSPA proposes to amend the entry ''Trifluoroacetyl chloride'' by adding Special Provision ''B7'' to Column (7). Multi-unit tank car tanks, containing ''Trifluoroacetyl chloride,'' are authorized to be fitted with fusible plugs in accordance with § 179.300–15. A petitioner (P–1254), stating that it is the primary supplier and shipper of ''Trifluoroacetyl chloride'' in the United States, requested that the entry be amended by adding, in Column (7), Special Provision B7. Special Provision B7 prohibits the use of pressure relief devices on multi-unit tank car tanks and requires openings for relief devices to be plugged or blank flanged. The petitioner stated that past experience has shown that fusible plugs used on cylinders in ''Trifluoroacetyl chloride'' service are more likely to corrode or to be mishandled when compared to solid steel plugs. In addition, the petitioner stated that packagings used to contain other similar poisonous by inhalation hazardous materials do not allow the use of fusible plugs and that the use of pressure relief devices on cylinders containing ''Trifluoroacetyl chloride'' is prohibited. RSPA believes the petitioner's request has merit and proposes to amend the entry ''Trifluoroacetyl chloride,'' in Column (7), by adding ''B7'' to ensure the safe transportation of this material in multi-unit tank car tanks.

Section 173.32c

RSPA proposes to revise paragraph (j) to allow monolithic solid materials to be loaded into IM portable tanks to a filling density of less than 80 percent by volume. Paragraph (j) currently specifies that an IM portable tank, or compartment thereof, having a volume greater than 7,500 liters may not be loaded to a filling density less than 80 percent by volume. This provision was intended to cover liquid and flowable solid hazardous materials in order to minimize the risk of accidents resulting from the sloshing and shifting of the center of gravity. A monolithic solid material which conforms to the tank geometry, such that the sloshing and shifting of the center of gravity is not possible, can be safely transported in an IM portable tank at a filling density of less than 80 percent by volume.

Section 173.40

Paragraph (d)(1) would be revised to clarify that a box, used to provide protection for the cylinder and, unless the cylinder has a protective collar or neck ring, protection to the valve against accidental functioning and damage, must be made of wood, fiberboard or plastic rather than made to a specific UN standard. This proposed change would be consistent with similar provisions in § 173.301 (g)(2) and (k) that permits a nonspecification box to be used for protection of the cylinder or valve.

Section 173.56

RSPA proposes to add new paragraphs (b)(1) (i) and (ii) to authorize a person approved by the Associate Administrator for Hazardous Materials Safety (AAHMS) to examine and make recommendations on the classification of explosives. The proposed paragraphs set out the criteria that a person must meet and demonstrate to qualify for approval to examine explosives and make recommendations to RSPA regarding appropriate shipping descriptions, divisions and compatibility groups. A person applying for this approval and a person who has obtained such an approval must meet all the criteria in paragraphs (b) (i) and (ii) and the provisions in Subpart H of Part 107. The person applying for this approval must demonstrate that the applicant is a resident of the United States; does not manufacture explosives; is not controlled by, or financially dependent upon, any entity that manufactures or markets explosives; does not perform any type of work in the explosives industry other than testing for determination of hazard class or performance; and is or employs a person who will sign examination and test reports and make recommendations for classifications to the AAHMS and who has at least ten years experience in the examination, testing and evaluation of explosives. To demonstrate compliance with each of these criteria, appropriate documentation must be submitted to the AAHMS. RSPA requests comments on all of the criteria, and in particular, the requirement for ten years' experience.

RSPA also proposes to revise paragraph (i) by removing wording including the phrase ''following examination in accordance with paragraph (h) of this section.'' This proposed change will facilitate the classification of a material or device without prior examination when adequate data is available.

Section 173.156

Paragraph (b)(1) grants an exception from the marking requirements in § 172.316 for ORM–D materials when unitized in cages, carts, boxes or similar overpacks and when certain other conditions are met. As § 172.316 primarily addresses the required format to display the ORM–D marking, a number of inquiries have been directed to RSPA requesting guidance as to whether the exception in § 173.156(b)(1) provides relief from the requirement to mark the proper shipping name, also. RSPA does not require the proper shipping name or other markings on packages specified in Subpart D of Part 172 to appear on cages, carts, boxes or similar overpacks containing ORM–D materials that are offered for transportation or transported according to § 173.156(b)(1). To remove that ambiguity, RSPA proposes to revise § 173.156(b)(1) by specifically stating that the marking requirements of Subpart D of Part 172 do not apply.

Section 173.308

RSPA proposes to revise paragraph (b), which contains an exception from the requirements of Parts 172 and 177, for transporting up to 1,500 cigarette lighters on one motor vehicle by highway. The revision would clarify

that only the hazard communication requirements in Subparts C through G and the training requirements in Subpart H are excepted with respect to Part 172. RSPA has received several inquiries as to whether Special Provision N10 applies if Part 172 is excepted. The provisions set forth in Special Provision N10 apply. As stated in § 172.102(a)(2), if a special provision imposes limitations or requirements in addition to the packaging provisions referenced in Column 8 of the § 172.101 Table (e.g., § 173.308), packagings must conform to the requirements of the special provision. RSPA also is proposing to require that the outer packaging be marked with the required proper shipping name in the § 172.101 Hazardous Materials Table or with the words ''CIGARETTE LIGHTERS'' and the total number of devices contained in the package. This marking will more effectively communicate the presence of these hazardous materials during transport and will provide a carrier with the information necessary to determine if the exceptions from Part 172 (hazard communication and training requirements) and Part 177 requirements apply.

Section 173.469

In paragraph (a)(4)(i), the value of 1.3×10^{-24} would be amended to read 1.3×10^{-4} in order to correct a printing error.

Part 175

Section 175.10

RSPA proposes to amend this section by revising paragraph (a)(4) to clarify that all types of self-defense sprays are prohibited from being transported by air in a passenger compartment, either on one's person or in carry-on baggage. However, one self-defense device, not exceeding 118 ml (4 fluid ounces) per passenger, would be allowed in checked baggage, provided the device incorporates a positive means to prevent accidental discharge. Also see earlier preamble discussion to §§ 171.8 and 172.101. This revision also would clarify that the quantity limits in paragraphs (a)(4)(i) and (a)(4)(ii) apply to both medicinal and toilet articles and to Division 2.2 aerosols for sporting or home use.

Section 175.25

Paragraph (a) requires that aircraft operators display notices warning passengers against carrying undeclared hazardous materials aboard aircraft, in their luggage or on their persons. The notice wording, in paragraph (a)(1), contains obsolete information on the statutory citation and the penalties. To reflect codification of the Federal hazardous material transportation law under 49 U.S.C. 5101–5127, RSPA proposes to revise the citation ''(49 U.S.C. 1809)'' to read ''(49 U.S.C. 5124)''. In addition, current paragraph (a)(1) states that each notice must state, '' A violation can result in penalties of up to $25,000 and five years'' imprisonment (49 U.S.C. 1809).'' In 1990, Congress amended the Federal hazardous materials transportation law to increase criminal penalties from $25,000 to penalties provided by Title 18 of the United States Code. Title 18 provides for fines of $250,000 for individuals and $500,000 for companies. RSPA believes that the cost to change the notices each time the penalty amount is increased is unnecessarily burdensome for aircraft operators. Therefore, RSPA proposes to amend the wording required in the notice to state that a violation can result in five years' imprisonment and penalties of $250,000 or more (49 U.S.C. 5124). In addition, a new paragraph (a)(4) would be added to allow aircraft operators to display existing notices containing the obsolete language until January 1, 2002.

RSPA proposes, also, to lower the quantity limit for medicinal and toilet articles carried in a passenger's luggage from 75 ounces to 70 ounces, consistent with the exception provided in § 175.10(a)(4)(i).

Section 175.26

This section requires each person who engages in the acceptance or transport of cargo for transportation by aircraft to display a notice, to persons offering such cargo, of the applicable requirements for hazardous materials aboard aircraft. RSPA proposes to amend the wording required in the notice to state that a violation can result in five years' imprisonment and penalties of $250,000 or more (49 U.S.C. 5124). In addition, a new paragraph (a)(4) would be added to allow each person who accepts or transports cargo for transportation by aircraft to display existing notices containing the obsolete language until January 1, 2002.

Part 177

Section 177.834

RSPA proposes to permit an IM portable tank to be unloaded while remaining on a transport vehicle with the power unit attached if the tank meets the outlet requirements in § 178.345–11 and the IM portable tank is attended during the unloading, as currently required for cargo tank motor vehicles under § 177.834(i). The last sentence in paragraph (h) would be revised to permit the unloading of an IM portable tank without being removed from the motor vehicle. A new paragraph (o) would contain the tank outlet requirement and require compliance with the attendance requirements in paragraph (i). Section 171.8 defines a portable tank as a ''bulk packaging (except a cylinder having a water capacity of 1,000 pounds or less) designed primarily to be loaded onto, or on, or temporarily attached to a transport vehicle or ship and equipped with skids, mountings, or accessories to facilitate handling of the tank by mechanical means * * *'' Thus, portable tanks are not intended to be filled or emptied while attached to a transport vehicle or a ship during transportation. This is in contrast with the definition of a cargo tank which states ''* * * which, by reason of its size, construction or attachment to a motor vehicle is loaded or unloaded without being removed from the motor vehicle.'' Because of the size and weight of many fully loaded IM portable tanks, there are increasing demands to unload these portable tanks while they remain on the transport vehicle with the power unit attached. RSPA believes that requiring consignees to have hoisting equipment at their unloading facilities and requiring a fully loaded portable tank to be removed from the vehicle is more burdensome and less safe than allowing the tank to remain on the vehicle during unloading.

Section 177.848

Based on a Federal Highway Administration initiative, in the paragraph (f) Compatibility Table for Class 1 (Explosive) Materials, the entry ''4'' for compatibility groups B and D suggests that all items in groups B and D may be transported together. Groups B and D are not compatible. However, a domestic exception (4) is allowed for Detonators when they are transported in accordance with restrictions in § 177.835(g). To avoid the possibility of incompatible explosives being transported together, RSPA proposes to clarify the restriction by replacing the entry ''4'' with the entry ''$X_{(4)}$''.

Part 178

Section 178.65

Paragraph (i)(2)(viii)(A) is revised to update the citation ''49 U.S.C. 1809'' to read ''49 U.S.C. 5124.''

Sections 178.352 through 178.364

Several specification packaging requirements for radioactive materials

contain obsolete section references. RSPA proposes to update these section references.

Part 180

Section 180.405

The regulations at § 173.33(b)(1), in effect prior to December 31, 1990, read: ''A cargo tank of the specification listed in Column 1 may be used when authorized in this part, provided the tank construction began before the date in Column 2.'' This provision applied to MC 300, 301, 302, 303, 304, 305, 310, 311 and 330 cargo tank motor vehicles. RSPA proposes to revise paragraph (c)(1) to recognize that the date marked on these older cargo tanks was the date initial construction began rather than the date construction was completed. This proposed wording also is consistent with the wording in paragraph (b) of this section.

In addition, paragraph (f) would be revised to allow the continued use of a cargo tank equipped with a self-closing system before September 1, 1993, but remarked and certified after that date.

Regulatory Analyses and Notices

A. Executive Order 12866 and DOT Regulatory Policies and Procedures

This proposed rule is not considered a significant regulatory action under section 3(f) of Executive Order 12866 and, therefore, was not reviewed by the Office of Management and Budget. This rule is not significant under the Regulatory Policies and Procedures of the Department of Transportation (44 FR 11034).

The costs and benefits asociated with this proposed rule are considered to be so minimal as to not warrant preparation of a regulatory impact analysis or regulatory evaluation. This determination may be revised as a result of public comment.

B. Executive Order 12612

This proposed rule has been analyzed in accordance with the principles and criteria contained in Executive Order 12612 (''Federalism''). Federal law expressly preempts State, local, and Indian tribe requirements applicable to the transportation of hazardous material that cover certain subjects and are not substantively the same as the Federal requirements. 49 U.S.C. 5125(b)(1). These subjects are:

(i) The designation, description, and classification of hazardous material;

(ii) The packing, repacking, handling, labeling, marking, and placarding of hazardous material;

(iii) The preparation, execution, and use of shipping documents pertaining to hazardous material and requirements respecting the number, content, and placement of those documents;

(iv) The written notification, recording, and reporting of the unintentional release in transportation of hazardous material; or

(v) The design, manufacturing, fabrication, marking, maintenance, reconditioning, repairing, or testing of a package or container which is represented, marked, certified, or sold as qualified for use in the transportation of hazardous material.

This proposed rule concerns the classification, packaging, marking, labeling, and handling of hazardous material, among other covered subjects.

If adopted as final, this rule would preempt any State, local, or Indian tribe requirements concerning these subjects unless the non-Federal requirements are ''substantively the same'' (see 49 CFR 107.202(d)) as the Federal requirements.

Federal law (49 U.S.C. 5125(b)(2)) provides that if DOT issues a regulation concerning any of the covered subjects after November 16, 1990, DOT must determine and publish in the **Federal Register** the effective date of Federal preemption. That effective date may not be earlier than the 90th day following the date of issuance of the final rule and not later than two years after the date of issuance. RSPA requests comments on what the effective date of Federal preemption should be for the requirements in this proposed rule that concern covered subjects.

C. Regulatory Flexibility Act

This proposed rule would amend miscellaneous provisions in the HMR, generally to clarify those provisions and to relax requirements that are overly burdensome. The proposed changes in this rule are generally intended to provide relief to shippers, carriers, and packaging manufacturers, some of whom are small entities (*e.g.*, governmental jurisdictions and not-for-profit organizations). The costs and benefits associated with this proposed rule are considered to be so minimal as to not warrant preparation of a regulatory impact analysis or regulatory evaluation. Therefore, I certify that this proposal will not, if promulgated, have a significant economic impact on a substantial number of small entities.

D. Paperwork Reduction Act

Under the Paperwork Reduction Act of 1995, no person is required to respond to a collection of information unless it displays a valid OMB control number. This NPRM does not propose any new information collection burdens. Information collection requirements addressing the approval of explosives in § 173.56 are currently approved under OMB approval number 2137–0557. This approval expires July 31, 1999.

E. Regulation Identifier Number (RIN)

A regulation identifier number (RIN) is assigned to each regulatory action listed in the Unified Agenda of Federal Regulations. The Regulatory Information Service Center publishes the Unified Agenda in April and October of each year. The RIN number contained in the heading of this document can be used to cross-reference this action with the Unified Agenda.

F. Unfunded Mandates Reform Act

This proposed rule does not impose unfunded mandates under the Unfunded Mandates Reform Act of 1995. It does not result in costs of $100 million or more to either State, local, or tribal governments, in the aggregate, or to the private sector, and is the least burdensome alternative that achieves the objective of the rule.

List of Subjects

49 CFR Part 171

Exports, Hazardous materials transportation, Hazardous waste, Imports, Incorporation by reference, Reporting and recordkeeping requirements.

49 CFR Part 172

Hazardous materials transportation, Hazardous waste, Labels, Markings, Packaging and containers, Reporting and recordkeeping requirements.

49 CFR Part 173

Hazardous materials transportation, Packaging and containers, Radioactive materials, Reporting and recordkeeping requirements, Uranium.

49 CFR Part 175

Hazardous materials transportation, Air carriers, Radioactive materials, Reporting and recordkeeping requirements.

49 CFR Part 177

Hazardous materials transportation, Motor carriers, Radioactive materials, Reporting and recordkeeping requirements.

49 CFR Part 178

Hazardous materials transportation, Motor vehicle safety, Packaging and containers, Reporting and recordkeeping requirements.

49 CFR Part 180

Hazardous materials transportation, Motor carriers, Motor vehicle safety, Packaging and containers, Reporting and recordkeeping requirements.

In consideration of the foregoing, 49 CFR chapter I is proposed to be amended as follows:

PART 171—GENERAL INFORMATION, REGULATIONS AND DEFINITIONS

1. The authority citation for part 171 would continue to read as follows:

Authority: 49 U.S.C. 5101–5127, 49 CFR 1.53.

§ 171.7 [Amended]

2. In the § 171.7(a)(3) Table, under ''Association of American Railroads'', for the entry ''AAR Manual of Standards and Recommended Practices, Section C—Part III, Specifications for Tank Cars, Specification M–1002'', the date ''September 1992'' would be revised to read ''January 1996''.

3. In § 171.8, the following definition is added in the appropriate alphabetical order to read as follows:

§ 171.8 Definitions and abbreviations.

* * * * *

Self-defense spray means an aerosol or non-pressurized device containing a material:

(1) Intended to have an irritating or incapacitating effect on a person or animal, but not more than 2 percent by mass, of a tear gas substance; and

(2) Meeting no hazard criteria other than § 173.132(a)(2) or § 173.140(a) of this subchapter and, for an aerosol, Division 2.1 or 2.2.

* * * * *

§ 171.8 [Amended]

4. In addition, in § 171.8, for the definition ''Marine pollutant'', in the first sentence, the wording ''this subchapter and,'' would be removed and ''this subchapter (also see § 171.4) and,'' would be added in its place.

§ 171.18 [Removed and Reserved]

5. Section 171.18 would be removed and reserved.

6. Section 171.19 would be revised to read as follows:

§ 171.19 Approvals or authorizations issued by the Bureau of Explosives.

Effective [90 days from the effective date of the Final Rule], all approvals or authorizations issued by the Bureau of Explosives (BOE), other than as authorized in part 179 of this subchapter, are no longer valid.

PART 172—HAZARDOUS MATERIALS TABLE, SPECIAL PROVISIONS, HAZARDOUS MATERIALS COMMUNICATIONS, EMERGENCY RESPONSE INFORMATION, AND TRAINING REQUIREMENTS

7. The authority citation for part 172 would continue to read as follows:

Authority: 49 U.S.C. 5101–5127; 49 CFR 1.53.

8. In § 172.101, the Hazardous Materials Table would be amended by adding the following entries, in appropriate alphabetical order, to read as follows:

§ 172.101 Purpose and use of hazardous materials table.

* * * * *

§ 172.101—HAZARDOUS MATERIALS TABLE

Symbols	Hazardous materials descriptions and proper shipping names	Hazard class or division	Identification numbers	PG	Label codes	Special provisions	(8) Packaging (§ 173.***)			(9) Quantity limitations		(10) Vessel stowage	
							Exceptions	Non-bulk	Bulk	Passenger aircraft/rail	Cargo aircraft only	Location	Other
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8A)	(8B)	(8C)	(9A)	(9B)	(10A)	(10B)
		*	*		*	*		*	*		*		
	xl[ADD]. *Self-defense sprays, aerosol, containing not more than 2% tear gas substances, see* Aerosols, etc.	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....	.....
+AD	Self-defense sprays, non-pressurized, *containing not more than 2% tear gas substances.*	9	NA3334	III	9	.....	155	203	None	No limit	No limit	.....	.....
		*	*		*	*		*	*		*		

§ 172.101 [Amended]

9. In addition, in § 172.101, in the Hazardous Materials Table, the following changes would be made:

a. For the entry, ''Detonators, non-electric *for blasting.*'', UN0455, in Column (8A), the reference ''none'' would be revised to read ''63(f), 63(g)''.

b. For the entry ''Trifluoroacetyl chloride'', in Column (7), Special Provision ''B7,'' would be added immediately following ''2,''.

PART 173—SHIPPERS—GENERAL REQUIREMENTS FOR SHIPMENTS AND PACKAGINGS

10. The authority citation for part 173 would continue to read as follows:

Authority: 49 U.S.C. 5101–5127; 49 CFR 1.45, 1.53.

11. In § 173.32c, paragraph (j) would be revised to read as follows:

§ 173.32c Use of Specification IM portable tanks.

* * * * *

(j) An IM portable tank or compartment thereof, having a volume greater than 7,500 liters, may not be loaded with hazardous material liquid or nonmonolithic solids to a filling density less than 80 percent by volume.

* * * * *

§ 173.40 [Amended]

12. In § 173.40, in paragraph (d)(1), in the first sentence, the wording ''4C1, 4D, 4F, 4G, 4H1 or 4H2 box'' is removed and ''wood, fiberboard or plastic box'' is added in its place.

13. In § 173.56, paragraph (b)(1) would be revised to read as follows:

§ 173.56 New explosives—definition and procedures for classification and approval.

* * * * *

(b) * * *

(1) Except for explosives made by or under the direction or supervision of the Departments of Defense or Energy, a new explosive must:

(i) Be examined and assigned a recommended shipping description, division and compatibility group, based on the tests and criteria prescribed in §§ 173.52, 173.57 and 173.58, by a person who—

(A) Is a resident of the United States;

(B) Has (directly or through an employee) at least ten years of experience in the examination, testing and evaluation of explosives;

(C) Does not manufacture or market explosives, and is not controlled by or financially dependent on any entity that manufactures or markets explosives, and whose work with respect to explosives is limited to examination, testing and evaluation; and

(D) Is approved by the Associate Administrator for Hazardous Materials Safety under the provisions of subpart H of part 107 of this chapter.

(ii) Receive a written approval and EX-number from the Associate Administrator for Hazardous Materials Safety. A person requesting approval of a new explosive must submit to the Associate Administrator for Hazardous Materials Safety a report of examination and assignment of recommended shipping description, division, and compatibility group prepared in accordance with paragraph (b)(1)(i) of this section.

* * * * *

§ 173.56 [Amended]

14. In addition, in § 173.56, in paragraph (i), the wording '', following examination in accordance with paragraph (b) of this section, revise its'' would be removed and the wording ''make a'' would be added in its place.

15. In § 173.156, paragraph (b)(1) introductory text would be revised to read as follows:

§ 173.156 Exceptions for ORM materials.

* * * * *

(b) * * *

(1) Strong outer packagings as specified in this part, marking requirements specified in subpart D of Part 172 of this subchapter, and the 30 kg (66 pounds) gross weight limitation are not required for materials classed as ORM–D when—

* * * * *

16. In § 173.308, paragraph (b) would be revised to read as follows:

§ 173.308 Cigarette lighter or other similar device charged with fuel.

* * * * *

(b) When no more than 1,500 devices covered by this section are transported in one motor vehicle by highway, the requirements of subparts C through H of part 172, and part 177 of this subchapter do not apply. However, each person who offers for transportation or transports the devices or prepares the devices for shipment must be informed of the requirements of this section. The outer packaging, as specified in Special Provision N10 of § 172.102(c)(5) of this subchapter, must be plainly and durably marked with the required proper shipping name specified in § 172.101 of this subchapter or the words ''CIGARETTE LIGHTERS'' and the number of devices contained in the package.

* * * * *

§ 173.469 [Amended]

17. In § 173.469(a)(4)(i), in the second sentence, the mathematical expression ''$(1.3 \times 10^{-24}$'' would be removed and ''$(1.3 \times 10^{-4}$'' would be added in its place.

PART 175—CARRIAGE BY AIRCRAFT

18. The authority citation for part 175 would continue to read as follows:

Authority: 49 U.S.C. 5101–5127; 49 CFR 1.53.

19. In § 175.10, paragraph (a)(4) would be revised to read as follows:

§ 175.10 Exceptions.

(a) * * *

(4) When carried by a passenger or crew member for personal use, the following materials that, in the aggregate, do not exceed 2kg (4.4 pounds) by mass or 2 liters (68 fluid ounces) by volume and where the capacity of each container does not exceed 0.5kg (1.1 pounds) by mass or 470 ml (16 fluid ounces) by volume are subject to the following conditions:

(i) Non-radioactive medicinal and toilet articles (including aerosols), may be carried in checked or carry-on baggage

(ii) One self-defense spray (see § 171.8 of this subchapter), not exceeding 118 ml (4 fluid ounces) by volume, that incorporates a positive means to prevent accidental discharge may be carried in checked baggage only

(iii) Other aerosols in Division 2.2 with no subsidiary risk may be carried in checked baggage only.

* * * * *

20. In § 175.25, in paragraph (a)(1), the second and fifth full paragraphs of the notice would be revised and a new paragraph (a)(4) would be added to read as follows:

§ 175.25 Notification at air passenger facilities of hazardous materials restrictions.

(a) * * *

(1) * * *

A violation can result in five years' imprisonment and penalties of $250,000 or more (49 U.S.C. 5124).

* * * * *

There are special exceptions for small quantities (up to 70 ounces total) of medicinal and toilet articles carried in your luggage and certain smoking materials carried on your person.

* * * * *

(4) Notwithstanding the requirements of paragraph (a)(1) of this section, a notice with the wording ''A violation can result in penalties of up to $25,000 and five years imprisonment. (49 U.S.C. 1809)'' may be used until December 31, 2001.

* * * * *

21. In § 175.26, paragraph (a)(2) is revised and a new paragraph (a)(4) is added to read as follows:

§ 175.26 Notification at cargo facilities of hazardous materials requirements.

(a) * * *

(2) A violation can result in five years' imprisonment and penalties of $250,000 or more (49 U.S.C. 5124).

* * * * *

(4) Notwithstanding the requirements of paragraph (a)(2) of this section, a notice with the wording ''A violation can result in penalties of up to $25,000 and five years imprisonment (49 U.S.C. 1809)'' may be used until December 31, 2001.''

* * * * *

PART 177—CARRIAGE BY PUBLIC HIGHWAY

22. The authority citation for part 177 would continue to read as follows:

Authority: 49 U.S.C. 5101–5127; 49 CFR 1.53.

§ 177.834 [Amended]

23. In § 177.834, in paragraph (h), in the next to the last sentence, the wording ''cargo tank'' would be removed and the wording ''cargo tank or IM portable tank'' would be added in its place and a new paragraph (o) would be added to read as follows:

§ 177.834 General requirements.

* * * * *

(o) *Unloading of IM portable tanks.* An IM portable tank may be unloaded

while remaining on a transport vehicle with the power unit attached if the tank meets the outlet requirements in § 178.345–11 of this subchapter and the tank is attended by a qualified person during the unloading in accordance with the requirements in paragraph (i) of this section.

§ 177.848 [Amended]

24. In § 177.848, in paragraph (f) in the Compatibility Table for Class 1 (Explosive) Materials, for compatibilty group B, under the column headed ''D'' and for compatibility group D, under the column headed ''B'', the entry ''4'' would be removed and ''$X_{(4)}$'' would be added in both places.

PART 178—SPECIFICATIONS FOR PACKAGINGS

25. The authority citation for part 178 would continue to read as follows:

Authority: 49 U.S.C. 5101–5127; 49 CFR 1.53.

§ 178.352–4 [Amended]

26. In § 178.352–4, at the end of the section, the section reference ''§ 178.103(3)(c)(1)'' would be revised to read ''§ 178.352–3(c)(1)''.

§ 178.354–2 [Amended]

27. In § 178.354–2, in the first sentence of paragraph (a), the section reference ''§ 178.104–5'' would be revised to read ''§ 178.354–5''.

§ 178.354–3 [Amended]

28. In § 178.354–3, in paragraph (c) introductory text, the section reference ''§ 178.104–3(a)(1)'' would be revised to read ''paragraph (a)(1) of this section''.

§ 178.354–5 [Amended]

29. In § 178.354–5, in paragraph (a), the wording ''§ 173.24 of this chapter'' would be revised to read ''§ 178.3''.

§ 178.356–4 [Amended]

30. In § 178.356–4, in paragraph (a), the wording ''§ 173.24 of this subchapter'' would be revised to read ''§ 178.3''.

§ 178.358–3 [Amended]

31. In § 178.358–3, the following changes would be made:

a. In paragraph (b)(6), the section reference ''§ 178.121–5(c)'' would be revised to read ''§ 178.358–5(c)''.

b. In paragraph (c), the section reference ''§ 178.121–5(b)'' would be revised to read ''§ 178.358–5''.

§ 178.358–5 [Amended]

32. In § 178.358–5, in paragraph (a), the wording ''§ 173.24 of this subchapter'' would be revised to read ''§ 178.3''.

§ 178.360–2 [Amended]

33. In § 178.360–2, the section reference ''§ 178.34–4'' would be revised to read ''§ 178.360–4''.

§ 178.362–3 [Amended]

34. In § 178.362–3, in paragraph (b), the section reference ''§ 178.104–4'' would be revised to read ''178.354–4''.

§ 178.364–5 [Amended]

35. In § 178.364–5, in paragraph (a), the wording ''§ 173.24 of this subchapter'' would be revised to read ''§ 178.3''.

PART 180—CONTINUING QUALIFICATION AND MAINTENANCE OF PACKAGINGS

36. The authority citation for part 180 would continue to read as follows:

Authority: 49 U.S.C. 5101–5127; 49 CFR 1.53.

37. In § 180.405, paragraph (c)(1) would be revised, paragraph (f)(7) would be redesignated as paragraph (f)(8) and new paragraph (f)(7) would be added to read as follows:

§ 180.405 Qualification of cargo tanks.

* * * * *

(c) * * *

(1) A cargo tank made to a specification listed in Column 1 of Table 1 or Table 2 of this paragraph (c)(1) may be used when authorized in this part, provided—

(i) The cargo tank initial construction began on or before the date listed in Table 1, Column 2, as follows:

TABLE 1

Column 1	Column 2
MC 300	Sept. 2, 1967.
MC 301	June 12, 1961.
MC 302, MC 303, MC 304, MC 305, MC 310, MC 311.	Sept. 2, 1967.
MC 330	May 15, 1967.

(ii) The cargo tank was marked or certified before the date listed in Table 2, Column 2, as follows:

TABLE 2

Column 1	Column 2
MC 306, MC 307, MC 312	Sept. 1, 1995.

* * * * *

(f) * * *

(7) A cargo tank remarked and certified in conformance with this paragraph (f) is excepted from the provisions of paragraph (c) of this section.

* * * * *

Issued in Washington, DC on September 16, 1997, under authority delegated in 49 CFR part 106.

Alan I. Roberts,

Associate Administrator for Hazardous Materials Safety.

[FR Doc. 97–24973 Filed 9–23–97; 8:45 am]

BILLING CODE 4910–60–P

Reader Aids

Federal Register

Vol. 62, No. 185

Wednesday, September 24, 1997

CUSTOMER SERVICE AND INFORMATION

Federal Register/Code of Federal Regulations

General Information, indexes and other finding aids **202–523–5227**

E-mail **info@fedreg.nara.gov**

Laws

For additional information **523–5227**

Presidential Documents

Executive orders and proclamations **523–5227**

The United States Government Manual **523–5227**

Other Services

Electronic and on-line services (voice) **523–4534**

Privacy Act Compilation **523–3187**

TDD for the hearing impaired **523–5229**

ELECTRONIC BULLETIN BOARD

Free **Electronic Bulletin Board** service for Public Law numbers, Federal Register finding aids, and list of documents on public inspection. **202–275–0920**

PUBLIC LAWS ELECTRONIC NOTIFICATION SERVICE

Free electronic mail notification of newly enacted Public Law is now available. To subscribe, send E-mail to **PENS@GPO.GOV** with the message: *SUBSCRIBE PENS-L FIRSTNAME LASTNAME.*

FAX-ON-DEMAND

You may access our Fax-On-Demand service with a fax machine. There is no charge for the service except for long distance telephone charges the user may incur. The list of documents on public inspection and the daily Federal Register's table of contents are available. The document numbers are 7050-Public Inspection list and 7051-Table of Contents list. The public inspection list is updated immediately for documents filed on an emergency basis.

NOTE: YOU WILL ONLY GET A LISTING OF DOCUMENTS ON FILE. Documents on public inspection may be viewed and copied in our office located at 800 North Capitol Street, NW., Suite 700. The Fax-On-Demand telephone number is: **301–713–6905**

FEDERAL REGISTER PAGES AND DATES, SEPTEMBER

46175–46430 2
46431–46664 3
46665–46866 4
46867–47136 5
47137–47358 8
47359–47550 9
47551–47744 10
47745–47912 11
47913–48164 12
48165–48448 15
48449–48730 16
48731–48934 17
48935–49120 18
49121–49416 19
49417–49588 22
49589–49904 23
49905–50228 24

CFR PARTS AFFECTED DURING SEPTEMBER

At the end of each month, the Office of the Federal Register publishes separately a List of CFR Sections Affected (LSA), which lists parts and sections affected by documents published since the revision date of each title.

3 CFR

Proclamations:
7018 47911
7019 48929
7020 48931
7021 48933
7022 49121
7023 49123

Executive Orders:
5327 (Revoked in part by PLO 4522) 49024
13061 48345

Memorandums:
Presidential Determination No. 97–31 of August 16, 1997 47907
Presidential Determination No. 97–32 of September 12, 1997 48729

5 CFR

338 46553
550 49125
870 48731
871 48731
872 48731
873 48731
874 48731
890 49557
1200 49589
1201 ..... 48449, 48935
1605 48936
1639 49417
1650 49112
2423 46175
2429 46175
2634 48746
2635 48746

Proposed Rules:
532 46221

7 CFR

201 48456
301 ..... 47551, 47553
361 48456
441 47745
457 47745
500 46431
633 48471
636 49358
800 48936
905 47913
920 49128
993 49905
997 48749
998 48749
1011 ..... 46665, 47923
1205 46412
1207 46175
1610 46867
1735 46867
1737 ..... 46867, 49557
1739 46867
1746 46867
1924 49907

Proposed Rules:
Ch. IV 48798
319 47770
400 47772
Ch. XIII 47156
1962 47384
1965 47384
1980 47384

8 CFR

214 48138
235 47749
274a 46553
316 49131

Proposed Rules:
3 48183
236 48183

9 CFR

50 49590
77 48165
78 ..... 48475, 48751
94 ..... 46179, 48751
96 46179

Proposed Rules:
319 46450

10 CFR

19 48165
50 47268
207 46181
218 46181
430 ..... 46181, 47536, 00000
490 46181
501 46181
601 46181
820 46181
1013 46181
1017 46181
1050 46181

Proposed Rules:
9 46922
32 49173
50 ..... 47268, 47588

12 CFR

25 47728
208 47728
210 48166
211 47728
229 48752
369 47728
615 49907
936 46872
1402 49593

Proposed Rules:
303 47969

41 CFR

Proposed Rules:
101–1.....47179
101–46.....47179

42 CFR

416.....47237
440.....47896, 49726
473.....49937

Proposed Rules:
Ch. IV.....49649
416.....46698
1000.....47182
1001.....47182, 47195
1002.....47182
1005.....47182

43 CFR

1810.....47568
3190.....49582

44 CFR

64.....49445, 49447
65.....47954
67.....47955

Proposed Rules:
67.....48193

45 CFR

650.....49938

46 CFR

28.....46672
90.....49308
98.....49308
125.....49308
126.....49308
127.....49308
128.....49308
129.....49308
130.....49308
131.....49308
132.....49308
134.....49308
174.....49308
175.....49308
298.....47149

47 CFR

0.....48951
1.....47960, 48773, 48951
2.....47960
5.....48951
25.....48486
26.....47960
52.....48774
54.....47369
61.....48485
64.....46447, 47152, 47237, 47369, 48787
68.....47371
69.....47369, 48485
73.....47371, 47762, 47763, 49171, 49622
79.....48487
90.....46211
97.....47960, 47961, 49557
101.....48787

Proposed Rules:
1.....46241, 48034
54.....47404, 48042
64.....47404
69.....48042
73.....46707, 46708, 47406, 47786, 47787, 49189, 49189, 49190
76.....46453
80.....46243
90.....46468

48 CFR

9.....48921
19.....48921
204.....48181, 49303
212.....47153
216.....49304
225.....47153, 49304
231.....47154, 49303, 49903
234.....49304
235.....49304
239.....49304
242.....49304
244.....47153, 49304
249.....49303
252.....47153, 49304, 49304, 49305, 49903
253.....48181, 49303
704.....47532
715.....47532
726.....47532
750.....47532
752.....47532
1602.....47569
1603.....47569
1604.....47569
1615.....47569
1616.....47569
1629.....47569
1631.....47569
1643.....47569
1644.....47569
1645.....47569
1649.....47569
1652.....47569
1653.....47569

Proposed Rules:
15.....49900
31.....49900
46.....47882
52.....49900
204.....48200
212.....47407, 48200
215.....48205
225.....47407
252.....47407, 48200
833.....47411
852.....47411

49 CFR

171.....49171, 49560
172.....46214
173.....49560
174.....46214
175.....46214
176.....46214
177.....46214
193.....48496, 48952
365.....49939
366.....49939
372.....49939
375.....49939
387.....49939
571.....46907
390.....49939
575.....46447
580.....47763
1000.....48953
1001.....48953
1002.....46217, 48497
1108.....46217, 48497
1011.....48953
1121.....47583
1150.....47583
1206.....46919

Proposed Rules:
171.....00000
172.....00000
173.....00000
175.....00000
177.....00000
178.....00000
180.....00000
216.....49728
223.....49728
229.....49728
231.....49728
232.....49728
238.....49728
387.....49654
571.....47414, 49190, 49663

50 CFR

20.....46420
25.....47372
32.....47372
285.....48497
600.....47584
622.....46677, 46679, 47765, 47766
648.....47767
660.....46920, 47587
679.....46680, 46681, 47768, 48497, 48498
697.....49451

Proposed Rules:
17.....46709, 46710, 48206, 49191, 49398, 49954
20.....46801
600.....49463
630.....47416
648.....46470, 48047, 48207, 49193, 49195
679.....49198, 49464

REMINDERS

The items in this list were editorially compiled as an aid to Federal Register users. Inclusion or exclusion from this list has no legal significance.

RULES GOING INTO EFFECT SEPTEMBER 24, 1997

AGRICULTURE DEPARTMENT

Food Safety and Inspection Service

Meat and poultry inspection:

Establishment drawings and specifications, equipment, and partial quality control programs; prior approval requirements elimination; published 8-25-97

ENVIRONMENTAL PROTECTION AGENCY

Air quality implementation plans:

Preparation, adoption, and submittal—

Volatile organic compounds definition; HFC-32, etc., exclusion; published 8-25-97

Pesticides; tolerances in food, animal feeds, and raw agricultural commodities:

Endothall; published 9-24-97

Fenarimol; published 9-24-97

Maneb; published 9-24-97

LABOR DEPARTMENT

Occupational Safety and Health Administration

State plans; development, enforcement, etc.:

New Mexico; published 9-24-97

Oregon; published 9-24-97

NATIONAL SCIENCE FOUNDATION

Patents:

Edison invention information management system use by NSF grantees to handle NSF-assisted inventions; published 9-24-97

POSTAL SERVICE

International Mail Manual:

Global package ling (GPL) service—

Implementation; published 9-24-97

TRANSPORTATION DEPARTMENT

Federal Aviation Administration

Airworthiness directives:

Bell Helicopter Textron, Inc.; published 8-20-97

Boeing; published 9-9-97

British Aerospace; published 9-9-97

Empresa Brasileira de Aeronautica S.A.; published 9-9-97

Raytheon; published 8-21-97

Saab; published 8-20-97

TRANSPORTATION DEPARTMENT

Federal Highway Administration

Motor carrier safety standards:

Technical amendments; published 9-24-97

TREASURY DEPARTMENT

Fiscal Service

Mortgage guaranty insurance company tax and loss bonds; book-entry form issuance requirement and conversion option; published 9-24-97

COMMENTS DUE NEXT WEEK

AGRICULTURE DEPARTMENT

Commodity Credit Corporation

Loan and purchase programs:

Price support levels—

Peanuts; comments due by 9-30-97; published 8-18-97

AGRICULTURE DEPARTMENT

Farm Service Agency

Federal claims collection; administrative offset; comments due by 9-30-97; published 8-1-97

Program regulations:

Disaster set-aside program; second installment provisions; comments due by 9-30-97; published 8-1-97

AGRICULTURE DEPARTMENT

Rural Business-Cooperative Service

Federal claims collection; administrative offset; comments due by 9-30-97; published 8-1-97

Program regulations:

Disaster set-aside program; second installment provisions; comments due by 9-30-97; published 8-1-97

AGRICULTURE DEPARTMENT

Rural Housing Service

Federal claims collection; administrative offset; comments due by 9-30-97; published 8-1-97

Program regulations:

Disaster set-aside program; second installment provisions; comments due by 9-30-97; published 8-1-97

AGRICULTURE DEPARTMENT

Rural Utilities Service

Electric loans:

Electric engineering, architectural services, and design policies and procedures; comments due by 10-3-97; published 8-4-97

Federal claims collection; administrative offset; comments due by 9-30-97; published 8-1-97

Program regulations:

Disaster set-aside program; second installment provisions; comments due by 9-30-97; published 8-1-97

COMMERCE DEPARTMENT

National Oceanic and Atmospheric Administration

Endangered and threatened species:

Umpqua River cutthroat trout; critical habitat designation; comments due by 9-29-97; published 7-30-97

Fishery conservation and management:

Alaska; fisheries of Exclusive Economic Zone—

Bering Sea and Aleutian Islands groundfish; comments due by 9-29-97; published 8-15-97

Bering Sea and Aleutian Islands groundfish; comments due by 9-29-97; published 8-13-97

Gulf of Alaska groundfish; comments due by 9-29-97; published 7-29-97

Alaska; fisheries of Exclusive Economic zone—

Gulf of Alaska groundfish; comments due by 10-2-97; published 8-18-97

DEFENSE DEPARTMENT

Acquisition regulations:

Architect-engineer selection process; comments due by 9-29-97; published 7-29-97

Privacy act; implementation; comments due by 9-30-97; published 8-1-97

ENERGY DEPARTMENT

Energy Efficiency and Renewable Energy Office

Consumer products; energy conservation program:

Fluorescent lamp ballasts; potential impact of possible energy efficiency levels; report availability and comment request; comments due by 10-2-97; published 8-25-97

ENVIRONMENTAL PROTECTION AGENCY

Air pollution control; new motor vehicles and engines:

National low emission vehicle program; voluntary standards; State commitments; comments due by 9-29-97; published 9-23-97

Air programs:

Outer Continental Shelf regulations—

California; consistency update; comments due by 9-29-97; published 8-28-97

Air programs: approval and promulgation; State plans for designated facilities and pollutants:

Louisiana; comments due by 9-29-97; published 8-29-97

Air programs; approval and promulgation; State plans for designated facilities and pollutants:

Louisiana; comments due by 9-29-97; published 8-29-97

Air quality implementation plans; approval and promulgation; various States:

Maryland; comments due by 10-2-97; published 9-2-97

Rhode Island; comments due by 10-2-97; published 9-2-97

Air quality planning purposes; designation of areas:

Arizona; comments due by 10-2-97; published 9-2-97

California; comments due by 10-2-97; published 9-2-97

Texas; comments due by 10-2-97; published 9-2-97

Clean Air Act:

State operating permits programs—

California; comments due by 10-3-97; published 9-3-97

Pesticides; tolerances in food, animal feeds, and raw agricultural commodities:

Buprofezin; comments due by 9-29-97; published 7-30-97

Fludioxonil; comments due by 9-30-97; published 8-1-97

Toxic substances:

comments due by 10-3-97; published 8-4-97

VETERANS AFFAIRS DEPARTMENT

Medical benefits:

State home facilities; construction or acquisition grants; comments due by 9-29-97; published 7-29-97